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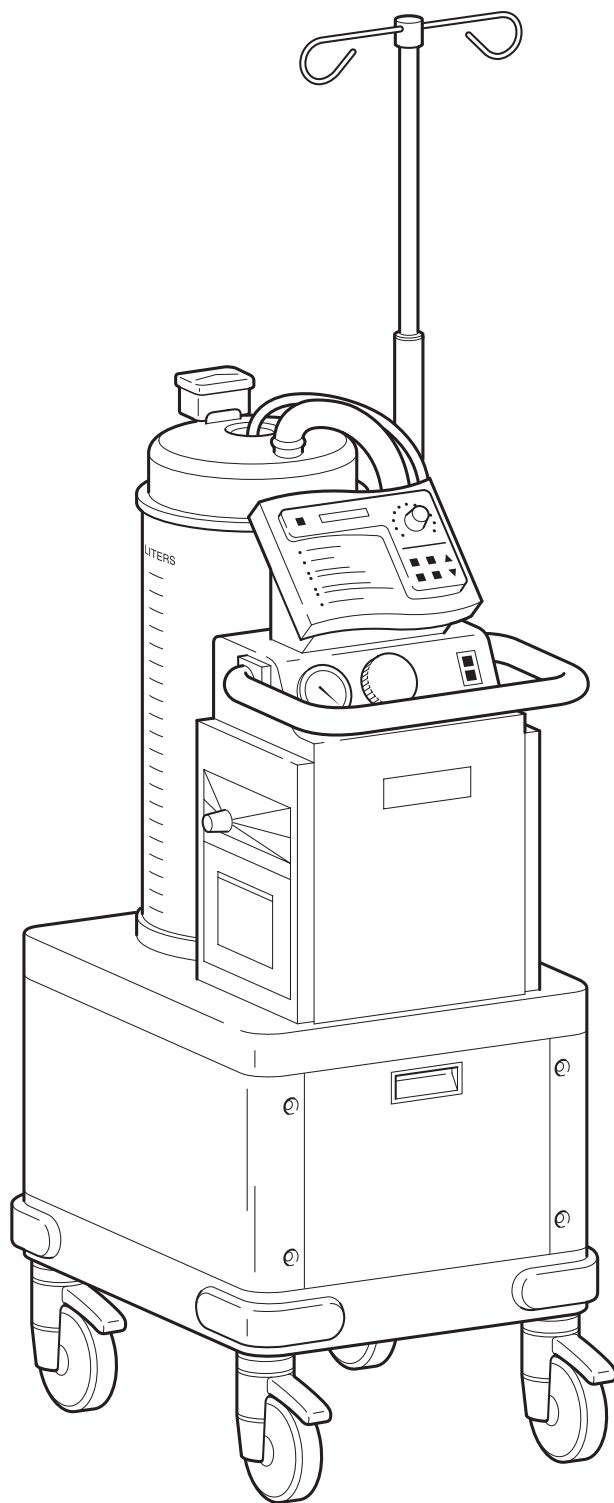
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NEPTUNE[®]

Waste Management System



Instructions for Use

NEPTUNE ROVERS

REF 700-1

REF 700-3

NEPTUNE DOCKING STATIONS

REF 700-4

REF 700-5

**IMPORTANT
INFORMATION:**
File in your
records.

Neptune Service Center

1-800-550-7836

stryker[®]
INSTRUMENTS

4100 E. Milham Avenue
Kalamazoo, Michigan 49001
(USA)
1-800-253-3210
269-323-7700

US Patent: D446,791
D479,744
2,455,731
5,997,733
6,180,000
6,222,283
6,331,246

Other patents pending.

WARNING • CAUTION • NOTE



This symbol is used to alert the reader to important safety and precautionary information. When displayed on a device, it refers the user to accompanying instructions and identifies safety and precautionary information.

Please read this manual and follow all instructions carefully. The words **WARNING, **CAUTION** and **NOTE** carry special meanings and should be carefully reviewed.**

WARNING: The personal safety of the patient and/or user may be involved. Disregarding this information could result in injury to the patient and/or hospital staff.

CAUTION: These instructions point out special service procedures or precautions that must be followed to avoid damaging the device.

NOTE: This provides special information to make maintenance easier or important instructions more clear.

INTENDED USE

The Neptune Waste Management System is typically used in operating rooms, pathology suites, surgical centers, emergency rooms and doctor offices to collect and dispose surgical fluid waste.

The information provided on the fluid volume display IS NOT intended to serve as an indicator for surgical fluids retained in the patient.

IMPORTANT SAFETY INSTRUCTIONS

SYSTEM SAFETY

- **Familiarization with the system prior to use is important. If you have any questions, contact your Stryker Instruments Representative or Stryker Neptune Service Center at 1-800-550-7836.**
- Before using this system, read and understand the information in this manual.
- The reading provided on the Fluid Volume Display IS NOT intended to serve as an indicator for surgical fluids retained in the patient.
- Do not use the system until:
 - the Docking Station is properly installed
 - the fluid couplers between the Docking Station and the Rover have been aligned and tested with clean water
 - the battery is charged and the Rover's performance has been verified.
 - the Rover has been docked in the Docking Station and a complete docking cycle has been processed without generating any error messages
- Prior to use, system components should be operated and inspected for damage. DO NOT use if damage is apparent.
- Some Rovers are supplied with a 20 amp plug. Do not modify this plug.
- This equipment is not suitable for use in the presence of flammable anesthetic mixture with air, oxygen or nitrous oxide.
- Use only Stryker approved accessories unless otherwise specified.
- Use standard precautions when working with patients being treated with radioisotopes or hazardous chemotherapy agents.
- Rover's fluid suction vacuum level is adjustable. Follow protocols for procedure specific suction levels or refer to ASTM F960 guidelines for procedure specific vacuum pressure for removal of surgical fluid waste.
- Surgical fluid waste is potentially infectious after collection.
- Handling biohazard waste is potentially dangerous.
- The Bloodborne Pathogens Standard, provided by the Occupational Safety and Health Association (OSHA), requires that all workers, having exposure to "potentially infectious materials," should wear the correct personal protection equipment and be offered immunization against hepatitis B. Additionally, these workers should receive tetanus immunization and boosters when required.
- Used disposable filters, tubes and various accessories may contain surgical fluid waste and must be handled as "potentially infectious materials."
- The Neptune System operator should wear gloves and protective eye wear during the docking procedure and while removing filters, tubes, and accessories.
- Each manifold suction port is designed to support a single suction line. DO NOT use a Y-connector to accommodate additional suction lines as cross-contamination can occur thereby placing the patient at risk for infection.
- If leakage of surgical fluid waste occurs, disconnect power immediately and contact the Neptune Service Center at 800-550-7836.
- Read the important safety information provided on the bottle of detergent REF 700-5-4.
- Use only Stryker approved Detergent REF 700-5-4. Other detergents may be chemically incompatible and therefore damage the system.
- Repairs by unauthorized individuals should not be attempted and may result in damage to or malfunction of the system or even personal injury. Non-operator serviceable components should be serviced by an authorized Stryker representative only. Any effort at field repair or adjustment by an unauthorized individual may invalidate your warranty.
- Do not use phenolic cleansers in the system as they can damage the internal components of the system.
- Do not remove the manifold while the vacuum pump is running or when the fluid suction gauge indicates that there is vacuum present in the Rover as fluid waste may be pulled into the fluid suction HEPA filter or wall suction and then leak out of the system.
- If your Rover has a smoke evacuator, do not suction surgical fluid waste with the smoke evacuator. Fluid sucked into the smoke evacuator prefilter and HEPA filter will cause significant damage to the internal components of the Rover.
- Keep hands away from the Docking Station doors. The couplings could inadvertently be triggered to extend and cause personal injury.
- Use the handle bar when transporting the Rover. Never push or pull the Rover by grasping the hoses as this will cause damage to the hoses.

Features

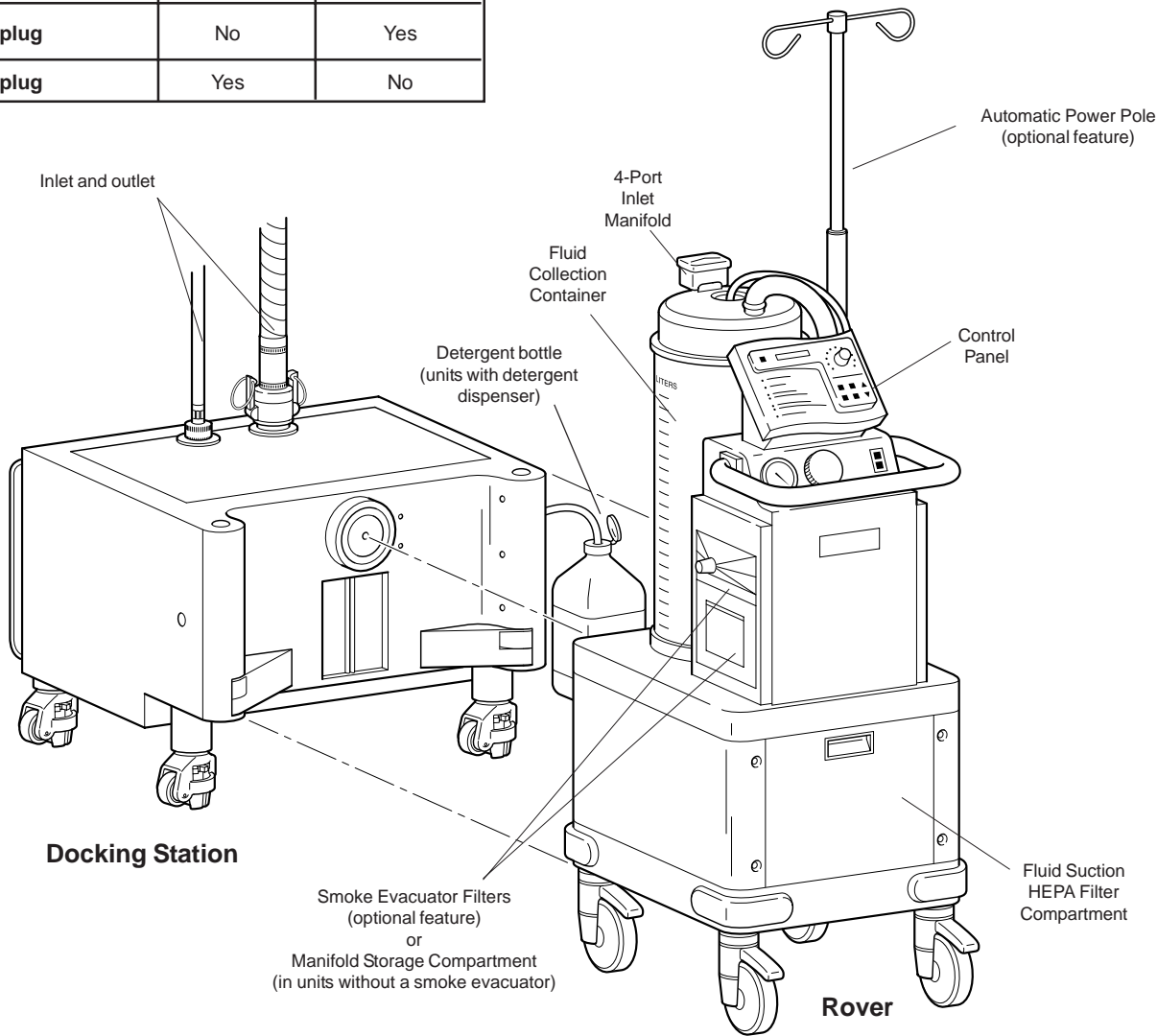
The Neptune Waste Management System consists of the Rover and the Docking Station.

The **Rover** is a mobile unit used in the operating room to suction and collect fluid waste and small debris from the surgical site. Suction tubing is connected to the inlet manifold. Fluid waste is suctioned from the surgical site through the inlet manifold ports and collected in the fluid collection container. The Rover is available with a smoke evacuator which collects smoke generated from cautery or laser surgery and a power pole.

The **Docking Station** is a stationary unit located in a utility area. The unit is plumbed with water inlet and outlet lines. When it is time to empty the Rover's collection container, the Rover is moved to the utility area where it interfaces with the Docking Station. Here the system automatically empties and rinses the collection container placing the surgical fluid waste into the hospital's waste water system. The Docking Station is available with a detergent dispenser which automatically releases liquid detergent into the system.

FEATURES FOR ROVER	Model	
	REF 700-1	REF 700-3
Smoke Evacuator	Yes	No
Power Pole	Yes	No
15 amp plug	No	Yes
20 amp plug	Yes	No

FEATURE FOR DOCKING STATION	Model	
	REF 700-4	REF 700-5
Detergent dispenser	No	Yes



ON

OFF

Up

Down

!

Precautionary information

♥

Type CF Applied Part

Pinch Point

Keep Hands Out

Controls and Functions

Control Panel

FLUID SUCTION ON/OFF - This button is used to activate and deactivate fluid suction. Suction level is regulated with the **fluid suction adjustment knob**. The **fluid suction gauge** indicates the suction level. Maximum vacuum pressure is 19 inHg [482 mmHg].

The fluid container holds 20 liters of fluid which is measured electronically. The volume is indicated on the **fluid volume display** with a maximum accuracy of +/- 175 mL. Depending on the Rover's settings, the fluid volume may be displayed in liters, cubic centimeters or milliliters.

When the container is holding fluid from previous procedure, you can press the **RESET FLUID VOLUME** to reset the Fluid Volume Display at zero. This allows you to observe the fluid waste collected from individual procedures.

SMOKE MODE (Rovers with a smoke evacuator only.)

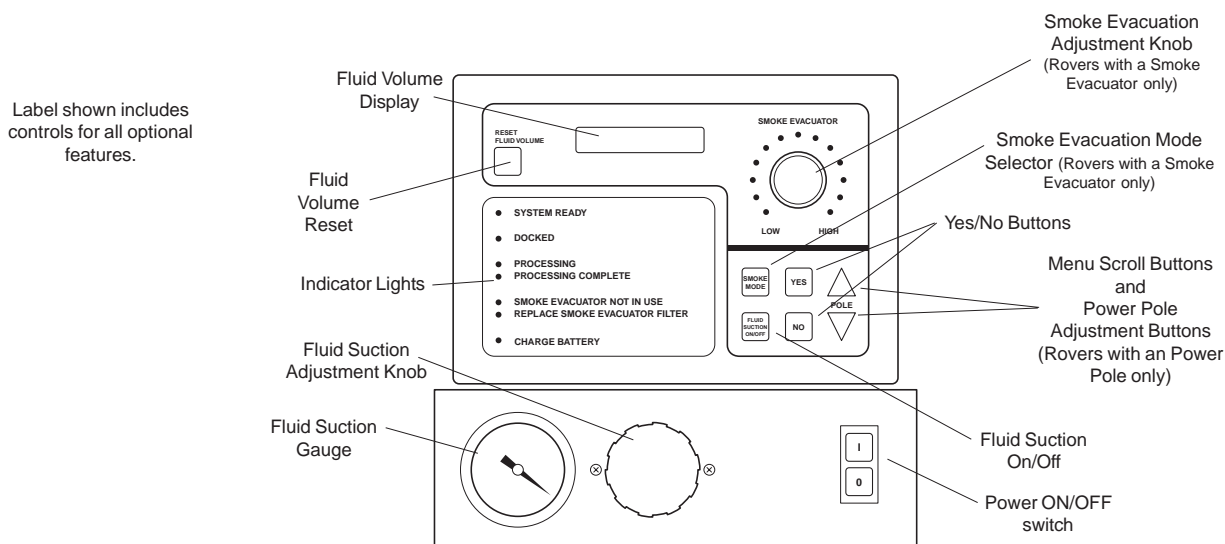
The **smoke evacuation mode selector** is pressed to toggle the smoke evacuator on and off. When turned on, smoke evacuation level is adjusted with the **smoke evacuator adjustment dial**. The lights surrounding the dial indicate vacuum level.

MENU SCROLL

The UP and DOWN arrows are used to scroll through the information displayed on the Fluid Volume Display.

POWER POLE ADJUSTMENT (Rovers with a power pole only.)

The UP and DOWN arrows are used to adjust pole height. The power pole holds a maximum of 6 liters.



Indicator lights

SYSTEM READY

Green - The system is plugged in and ready for use in the operating room or ready to interface with the Docking Station. This light flashes when the Rover is unplugged.

Off - The Rover is docked.

NOTE: If this light is off when the Rover is not docked, the internal battery is dead and must be recharged.

DOCKED

Green - The docking sequence is successful and the light remains lit during waste transfer and rinse cycles.

Orange - Docking was not successful. When this occurs, check Fluid Volume Display. Refer to *Error Code Information*.

Off - Rover is separated from the Docking Station.

PROCESSING

Green - Waste transfer and rinse cycles are underway.

Off - Waste transfer and rinse cycles are complete.

PROCESSING COMPLETE

Green - Rinse cycles are complete. Another rinse cycle can be activated or the Rover can be put back into service. The Fluid Volume Display prompts the user to activate additional rinse cycles. Pressing YES activates another rinse cycle. Pressing NO completes the current cycle.

NOTE: Rinse cycles may be repeated as many times as needed.

SMOKE EVACUATOR NOT IN USE - When illuminated, the smoke evacuator is off.

Fluid Suction HEPA Filter REF 700-27 REPLACE SMOKE EVACUATOR FILTER (Rovers with a smoke evacuator only.)

Orange - Smoke evacuator HEPA filter must be replaced.

Off - Smoke evacuator HEPA filter is still usable.

CHARGE BATTERY

Orange - Battery requires recharging. Refer to *Charging the Internal Battery*.

Off - Battery charge is sufficient.

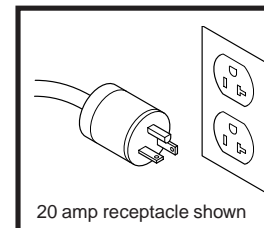
NOTE: This light will flash when the Rover is unplugged to indicate that the battery requires recharging.

Using the Neptune System - overview

These are abbreviated instructions for general set-up. For more detailed instructions, turn to the references suggested throughout the steps.

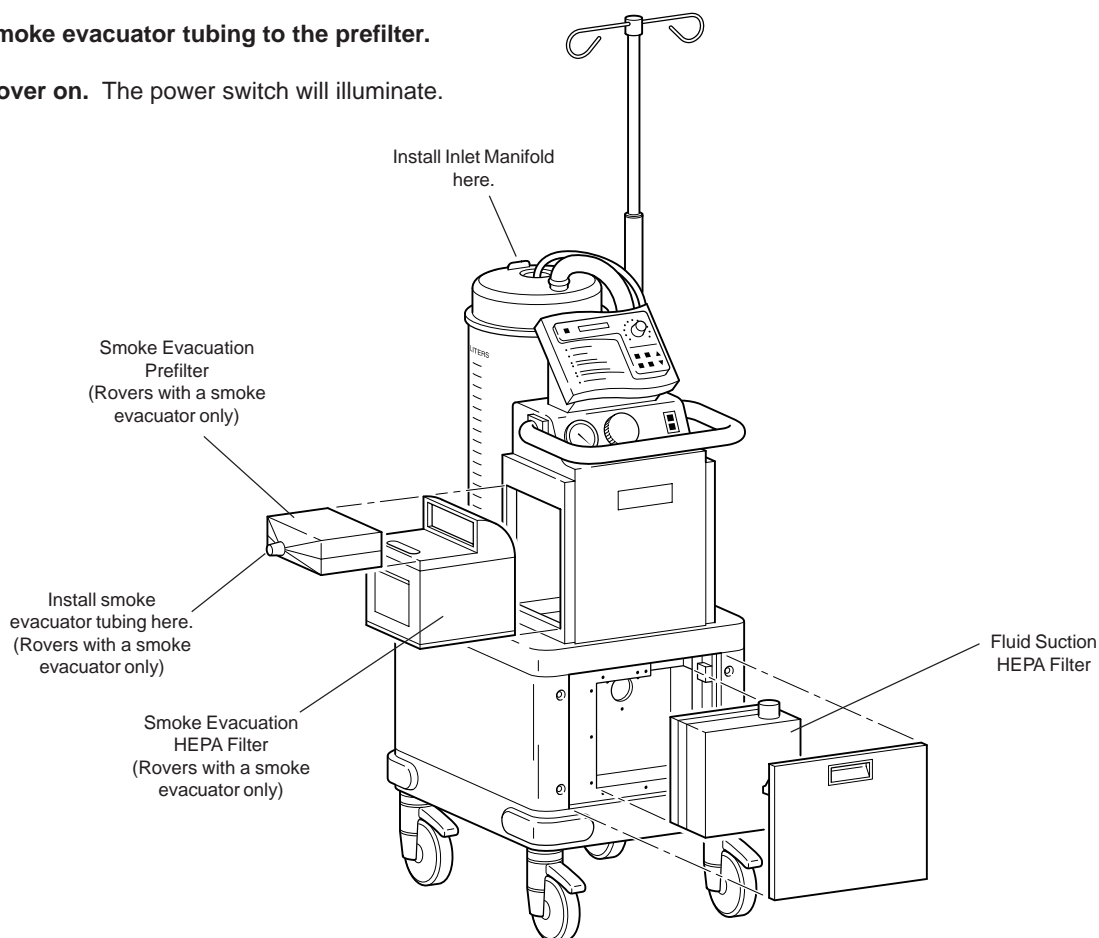
Before Surgical Procedure

1. **Check the SYSTEM READY indicator. The green light should be on.** If the orange CHARGE BATTERY light is on, recharge the battery. Refer to *Charging the Internal Battery*.
2. **Move the Rover to a convenient location in the operating room.**
Lock the wheels to prevent movement.
3. **Plug the power cord into a wall receptacle.** (20 amp receptacle shown in illustration.)
4. **Check the fluid volume display to determine if the smoke evacuator or fluid HEPA filters need to be replaced.** Refer to *Filter Installation - Smoke Evacuator* or *HEPA Filter* or *Filter Installation Fluid HEPA Filter*.
5. **Install the inlet manifold in the top of the canister. Connect suction tubing to the manifold's port(s) and the desired nozzle(s) to the suction tubing.** Refer to *Manifold Installation*. Use sterile technique to protect the distal end of tubing and suction nozzles. The manifold is single patient use only.



NOTE: Follow steps 6-7 only if the Rover has a smoke evacuator. Otherwise, proceed to step 8.

6. **Install smoke evacuator prefilter.** This filter is for single patient use only. Refer to *Filter Installation - Smoke Evacuator Prefilter*.
7. **Connect smoke evacuator tubing to the prefilter.**
8. **Turn the Rover on.** The power switch will illuminate.



During the Surgical Procedure

1. Press **FLUID SUCTION ON/OFF** to activate suction. Adjust maximum suction level with the rotary knob. The vacuum range is 0 – 19 inHg [0 – 482 mmHg].

NOTE: Keep unused manifold ports capped. If ports are left open, vacuum level is reduced.

2. If desired, press the **FLUID VOLUME RESET** button to reset fluid volume display at zero.

NOTE: If fluid is not drained between procedures, the fluid volume is limited to the capacity remaining in the collection container.

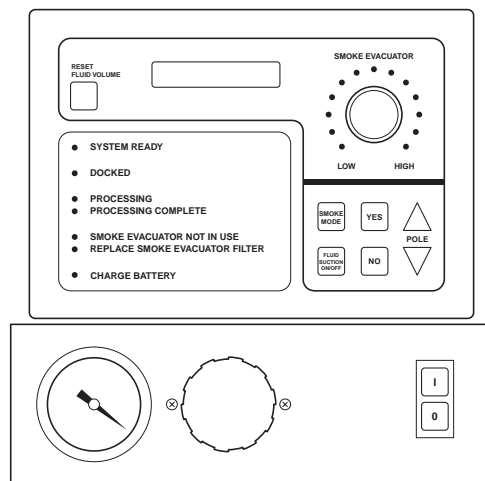
NOTE: If the display has been set at zero, the total volume of collected waste fluid must be read from the graduation marks on the side of the fluid collection container.

NOTE: The Rover will automatically shut off fluid suction when the fluid collection container is holding 20 liters of fluid.

NOTES:

The following notes are for Rovers with a smoke evacuator:

- Toggle the smoke evacuation on and off by depressing the SMOKE MODE button. See *Features* for further details.
- Set the smoke evacuation level by turning the adjustment dial.
- The Rover will automatically shut off fluid suction when the fluid collection container is holding 20 liters of fluid. The smoke evacuator will continue to function.



After the Surgical Procedure



WARNING: Used disposable filters, tubes and various accessories will contain surgical fluid waste and must be handled as “potentially infectious materials.”



WARNING: The operator should wear gloves and protective eye wear while removing filters, tubes, and accessories from the Rover.

1. **Keep fluid suction running while coiling the suction tubing toward the manifold as this will help purge the tubing of fluid waste.**
2. **Turn the fluid suction off. Wait until the fluid suction gauge reads zero then lift the manifold out of the collection canister. Cap the large port on the underside of the manifold to prevent leakage of fluid waste. Discard the manifold and suction tubing handling each as biohazard waste materials. Refer to *Manifold Installation*.**



WARNING: Do not remove the manifold while the vacuum pump is running or while the fluid suction gauge indicates vacuum pressure in the canister as fluid waste may be pulled into the Fluid Suction HEPA Filter or wall suction and then leak out of the Rover.

3. **Turn the Rover off and unplug the power cord.** Wrap the cord around the cord wrap brackets. Depending the Rover's settings, the power pole may lower at this time.
4. **Rovers with a smoke evacuator only: Remove the smoke evacuator prefilter while suction tubing is still attached. Discard both as potential biohazard waste materials.**
5. **When the Rover is not needed for another case, return the Rover to the Docking Station to empty the collection container.**

NOTE: The fluid collection container can be emptied either between surgical procedures or after several procedures when it is full.

CAUTION: To prevent damage to the Neptune System, it is important to process a complete docking cycle before stored fluid waste begins to thicken. Do not allow fluid waste to sit in the Rover for more than 24 hours. Over time, fluid waste may coagulate and become too thick to drain from the Rover.

Docking Procedure

NOTE: If using a Detergent Dispensing Docking Station, refer to the instructions on the next page.



WARNING: The operator must wear gloves and protective eye wear during the docking procedure.

NOTE: The Rover must be turned off and unplugged so that the display screen shows WAITING TO DOCK.

1. **Center the Rover in front of the Docking Station then press the Rover against the Docking Station so that the magnets come into contact.** When the Rover hits the Docking Station strike plates, the doors automatically open to allow the fluid couplings to engage. **Continue pressing the Rover against the Docking Station until the DOCKED light illuminates.** Next the PROCESSING light turns on and stays on during processing.

NOTE: Portions of the docking cycle may include: offloading of contents, prerinse, detergent injection, wash and prefill.

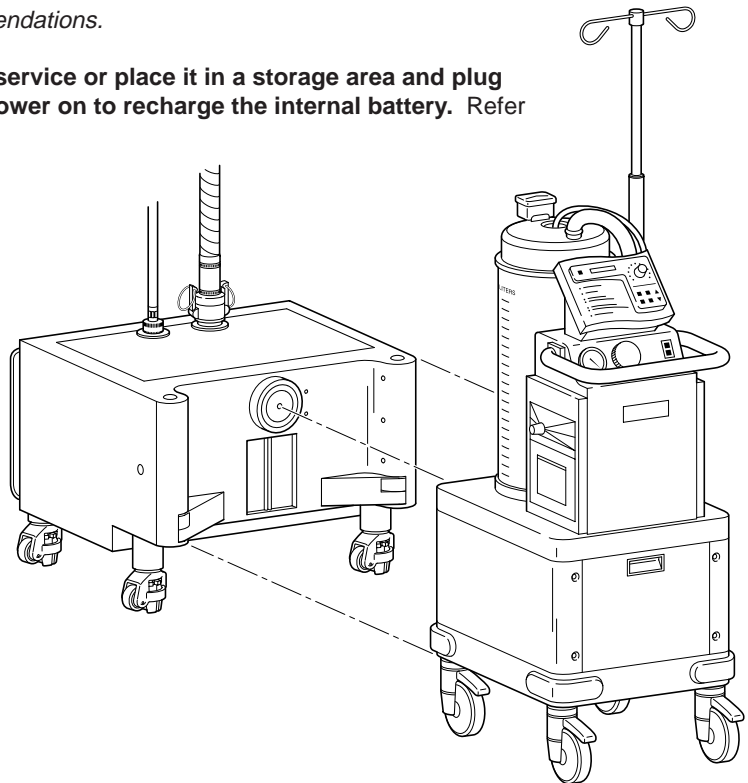
Cycle Time

Drainage: 90-seconds with a full tank

Quick Rinse: Approximately 2 minutes, 45 seconds after Rover has offloaded

Standard Wash: Approximately 3 minutes, 30 seconds after Rover has offloaded, depending on settings

2. **When the rinse cycle ends, the fluid volume display prompts for an EXTRA RINSE cycle. Press either the YES or NO button on the control panel to select the desired response.**
NOTE: Pressing YES activates an additional rinse cycle. When that cycle ends, the display repeats the prompt. Activate as many rinse cycles as desired.
3. **Select NO to finish the disposal process.** The Docking Station releases the Rover and the PROCESSING COMPLETE indicator illuminates.
4. **Pull the Rover away from the Docking Station. Use a standard disinfectant to wipe residual fluid waste from the Rover's couplers. Handle fluid waste as a potential biohazard waste.**
5. **Visually inspect each coupler to ensure they are fully sealed. They are fully sealed if the inner plug is flush with the end of the coupler. If couplers are not fully sealed, discontinue use of the Rover and contact the Neptune Service Center to arrange for repair.**
6. **Clean the Rover.** Refer to *Cleaning Recommendations*.
7. **After cleaning, return the Rover to surgical service or place it in a storage area and plug unit into a 20 amp wall outlet and turn the power on to recharge the internal battery.** Refer to *Storage Recommendations*.



Docking Procedure for systems using a Detergent Dispensing Docking Station



WARNING: The operator must wear gloves and protective eye wear during the docking procedure.

NOTE: When the Rover is docked in the Docking Station, the delay and drainage cycles activate automatically. During the delay cycle, you select the cleansing cycle: Quick Rinse - a rinse cycle with liquid detergent followed by a clear water rinse; or Standard Wash - a slightly longer cycle with two iterations of liquid detergent and clear water rinse. If no cycle is selected, the Standard Wash cycle is performed. Both the Quick Rinse cycle and the Standard Wash cycle use approximately 40 mL of detergent, depending on settings. After the cleansing cycle is completed, the system prompts you to either activate an additional cleansing cycle or end the docking procedure.

Cycle Times

Drainage: 90-seconds maximum with a full tank

Quick Rinse: Approximately 2 minutes, 45 seconds after Rover has offloaded

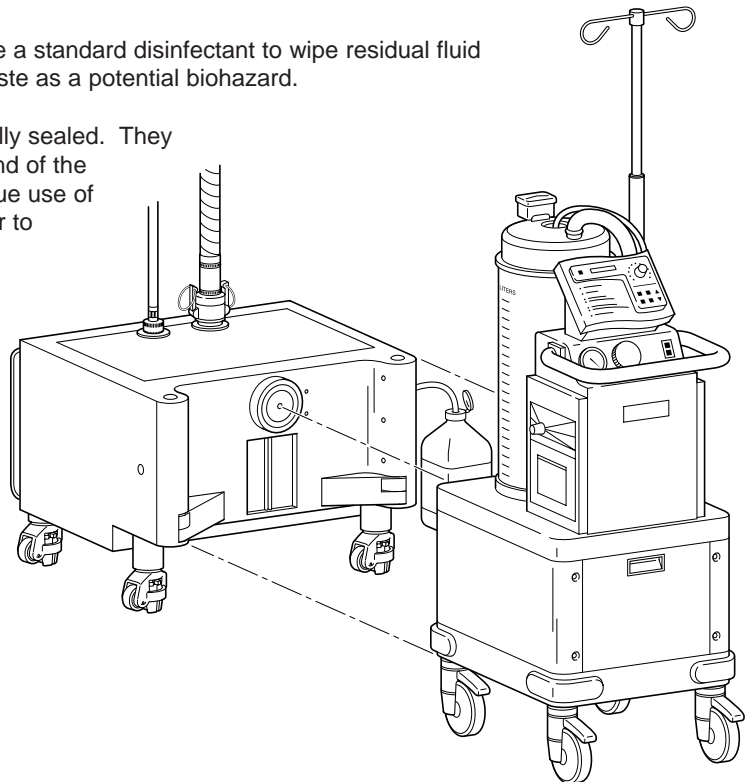
Standard Wash: Approximately 3 minutes, 30 seconds after Rover has offloaded, depending on settings.

1. Prior to docking, turn off and unplug the Rover. The display screen shows WAITING TO DOCK.
2. Center the Rover directly in front of the Docking Station. Press the Rover against the Docking Station. As the Rover hits the Docking Station's strike plates, the doors automatically open to allow engagement of the fluid couplings. Continue pressing until the DOCKED light illuminates. When the delay cycle begins, the PROCESSING light illuminates.
3. The Rover will prompt with "Quick Rinse? Y/N". Select a cleansing cycle by using the Yes or No button. If no buttons are pressed, the Rover will default to the Standard Wash cycle.

NOTE: Once a cycle is selected, the fluid volume display identifies the portion of the cycle that is currently being performed.

NOTE: When the selected cycle is complete, you may activate as many extra rinse cycles as desired or end the docking procedure.

4. When satisfied that the fluid container is sufficiently rinsed, select NO to end the docking procedure. When NO is pressed, the Docking Station releases the Rover and the PROCESSING COMPLETE indicator illuminates.
5. Pull the Rover away from the Docking Station. Use a standard disinfectant to wipe residual fluid waste from the Rover's couplers. Handle fluid waste as a potential biohazard.
6. Visually inspect the couplers to ensure they are fully sealed. They are fully sealed if the inner plug is flush with the end of the coupler. If couplers are not fully sealed, discontinue use of the Rover and contact the Neptune Service Center to arrange for repair.
7. Clean the Rover. Refer to *Cleaning Recommendations*.
8. After cleaning, return the Rover to surgical service or place it in storage. While in storage, the unit should be plugged into a wall outlet with the power turned on to recharge the internal battery. Refer to *Storage Recommendations*.



Cleaning Recommendations



WARNING: Used disposable filters, tubes and various accessories may contain surgical fluid waste and must be handled as "potentially infectious materials."



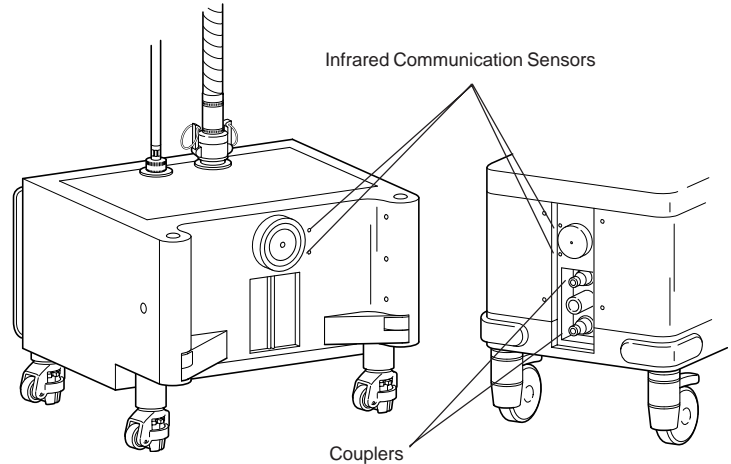
WARNING: Keep hands away from the Docking Station doors. The docking mechanism could be inadvertently triggered to extend from the Docking Station and cause personal injury.

NOTE: Follow the hospital's housekeeping protocol for cleaning procedures.

1. Wipe the surfaces of the Rover and Docking Station with general purpose disinfectant.

CAUTION: DO NOT use Cidex or similar cleansers on the Rover or Docking Station as they may damage the surfaces.

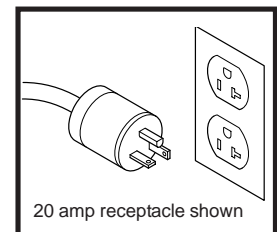
2. Pay particular attention to the infrared communication sensors indicated in the illustration. If these are not clean, the Rover and Docking Station may not function properly.
3. Wipe away residual matter from the couplers with a disinfectant wipe.
4. Visually inspect each coupler to ensure they are fully sealed. Full seals exist when the coupler's inner plug is flush with the end of the coupler.



WARNING: Discontinue use of the Rover if either coupler is not fully sealed and contact the Neptune Service Center to arrange for repair.

Storage Recommendation

IMPORTANT: When the Rover is not in use, plug it into a wall outlet and turn the power on to recharge the internal battery. Do not recharge the battery while the Rover is docked. Refer to *Recharging the Internal Battery*.



Periodic Maintenance Schedule

INTERVAL	ACTIVITY
6 months	Replace the fluid HEPA filter.
	Inspect fluid collection canister for damage such as cracks. Call the Neptune Service Center if damage is apparent.
	Inspect Docking Station plumbing for leaks
Daily	Visually inspect the Rover's couplers to ensure they are fully sealed. Full seals exist when the coupler's inner plug is flush with the end of the coupler. Discontinue use if a coupler is not fully sealed and contact the Neptune Service Center.
As indicated	Install a new smoke evac. HEPA /charcoal filter and/or Fluid HEPA filter when the Rover indicator signals the need for a new filter.
As needed	Replace the fluid suction prefilter when visibly saturated.
As needed	Check level of detergent in the dispensing bottle. Replace bottle of detergent as needed.

Neptune Service Center 1-800-550-7836

Disposable Components


Disposables Replacement Guide			
Manifold	REF	Component	Comments
	700-15	Single Port Manifold	Single patient use only.
	700-20	Standard 4-Port Manifold	Single patient use only.
	-	Tubing Lines	Single patient use only. Use 5/16 in. (.79 mm) I.D. standard tubing.
	711-70-1	Fluid Suction Supply Hose	Every 6 months or more frequently if needed.
Filters	700-21	Smoke Evac. HEPA /Charcoal Filter	Rover indicator signals when to replace this filter.
	700-22	Smoke Evac. Pre-filter	Single patient use only.
	700-27	Fluid Suction HEPA Filter	Every 6 months or as indicated by the Rover.
Smoke Evac. Tubing	700-23	Ultram Wand	Single patient use only.
	700-24	6 ft. Tubing	Single patient use only.
	700-25	10 ft. Tubing	Single patient use only.
	700-26	10 ft. Tubing with Wand	Single patient use only.
	700-28	Smoke-Evac Suc. Device, Adj. Length	Single patient use only.
	700-29	Max-Evac Suction Device	Single patient use only.
Detergent	700-5-4	(4) One Gallon Bottles	Remove and discard empty bottle and cap. Reuse the tube.

Manifold Installation

Manifolds are non-sterile, single use only filters used for fluid suction.


The Standard 4-Port Manifold REF 700-20 contains an anti-reflux valve to prevent cross-contamination between multiple lines. The lid can be removed to allow retrieval of bio-matter which collects in the spongy filter.

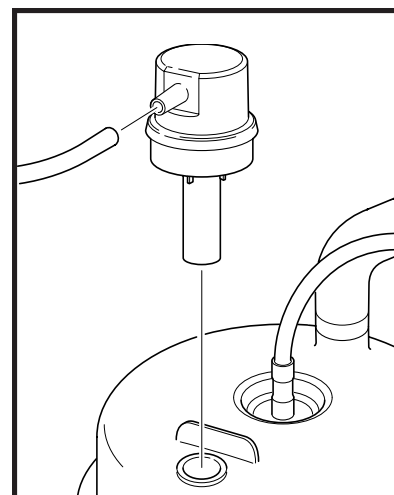
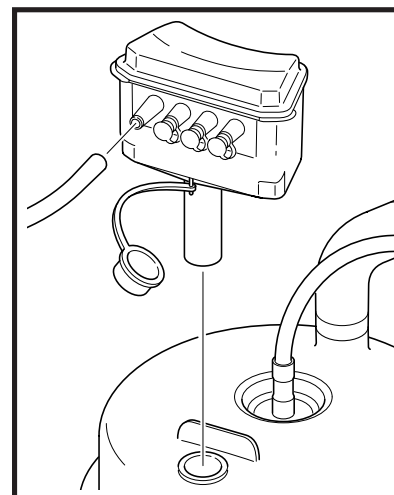
The Single Port Manifold REF 700-15 is intended for procedures where minimal bone cutting and tissue collection is involved. Fluid collection is typically less than 1500 cc. This manifold is not intended for use in total joint replacement procedures.

 **WARNING:** Each manifold suction port is designed to support a single suction line. DO NOT use a Y-connector to accommodate additional suction lines as cross-contamination can occur thereby placing the patient at risk for infection.

1. Insert manifold into the collection container as shown.
2. Attach 5/16 in. [7.9 mm] or 1/4 in. [6.4 mm] I.D. suction tubing with a 5/16 in. [7.9 mm] adapter tube to manifold port(s). Cap unused ports.
NOTE: Open ports decrease vacuum pressure within the collection container.
3. Standard 4-Port Manifold only: If retrieval of bio-matter is desired, remove the manifold's lid after the surgical procedure and collect bio-matter from the spongy filter.

CAUTION: Repeated removal of the lid from the 4-port manifold may damage the seal and reduce vacuum efficiency.

 **WARNING:** Handle bio-matter in accordance with OSHA regulations on biohazard materials.



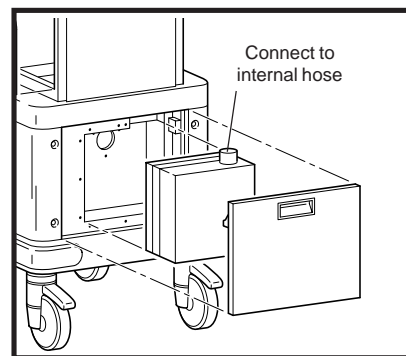
Filter Installation

Fluid Suction HEPA Filter REF 700-27

NOTE: This filter must be replaced every 6 months or as indicated by the Rover otherwise there will be a noticeable reduction in fluid suction.

NOTE: Filter life is 500 hours. The system automatically calculates filter life. The remaining filter life is displayed on the fluid volume display when the Rover is turned on.

1. Open filter compartment. Set door aside.
2. Detach hose then remove and discard the used filter.
3. Install new filter and reconnect to internal hose.

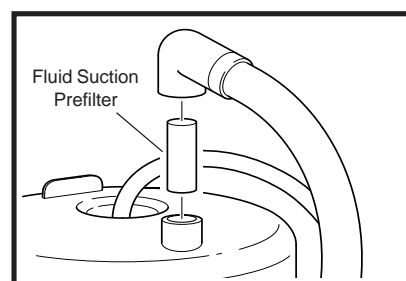


WARNING: Handle bio-matter in accordance with OSHA regulations on biohazard materials.

Fluid Suction Prefilter REF 700-27-1

NOTE: Replace this filter when it appears to be saturated.

1. Disconnect the fluid suction supply hose from the fluid collection container lid.
2. Remove the filter from the lid and discard.
3. Install the new filter and reconnect the fluid suction supply hose.



WARNING: Handle bio-matter in accordance with OSHA regulations on biohazard materials.

Smoke Evacuator HEPA Filter REF 700-21

NOTE: Replace the smoke evacuator HEPA filter when the REPLACE SMOKE EVAC light turns orange.

NOTE: Filter life is 120 hours. The system automatically calculates filter life. The remaining filter life is displayed on the fluid volume display when the Rover is turned on.

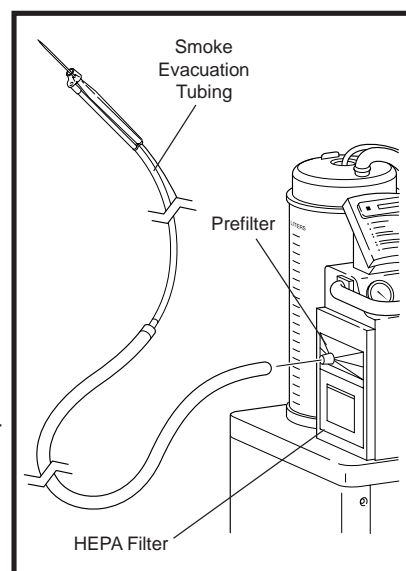
1. Slide the filter into the compartment in the orientation shown. The filter must be pushed in fully so that its external surface is flush with the compartment opening.

Smoke Evacuator Prefilter REF 700-22

NOTE: The smoke evacuator prefilter is single use only and must be replaced for each surgical case.

CAUTION: The smoke evacuator is designed to collect smoke. If fluid is inadvertently suctioned, the prefilter will collect approximately 100 mL of fluid. Any additional fluid will be pulled into the HEPA filter. Once fluid enters the HEPA filter, it is sucked into the system and will cause damage to the motor which requires repair by an authorized Stryker representative.

1. Slide the filter into the opening over the HEPA filter until fully flush with frame. See illustration.
2. Connect desired smoke evacuation tubing to the prefilter. See illustration.



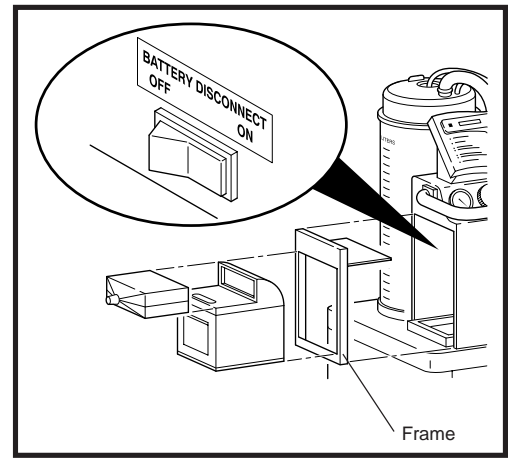
WARNING: Handle bio-matter in accordance with OSHA regulations on biohazard materials.

Battery Disconnect Switch

Upon initial receipt of the Rover, the internal battery must be activated.

1. Pull the frame from the compartment. See figure.
2. Locate the disconnect switch in the top center of the chamber.
3. Place the switch in the ON position.
4. Re-install frame

NOTE: If the fluid volume display indicates “Low Battery,” the internal battery must be charged before the Rover can be used. See *Charging the Internal Battery*.



Charging the Internal Battery

Rover's internal battery recharges while the unit is plugged into a power source and turned on. Charging will occur while the unit is in use in the operating room but should also be done while Rover is idle and placed in storage.

1. Plug the Rover into an outlet and turn on the power switch.
NOTE: The battery will not charge if the Rover is not turned on.
2. Allow the battery time to charge. Time will vary depending on the amount of charge in the battery but should not exceed 5 hours.
3. The battery is sufficiently charged when the CHARGE BATTERY light is off.

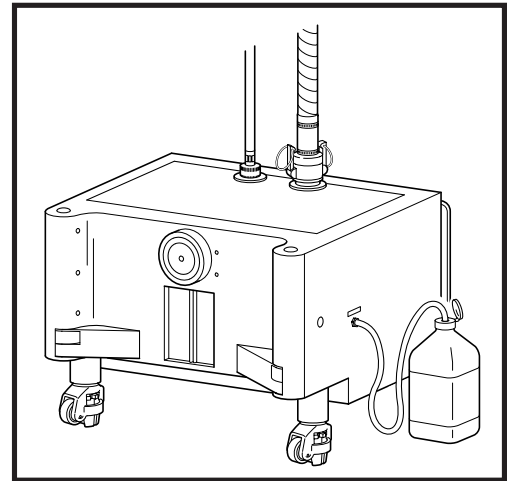
Replacing the Detergent Dispensing Bottle

WARNING: Read the important safety information provided on the bottle of Detergent REF 700-5-1 and 700-5-4.

CAUTION: Use only Stryker approved Detergent REF 700-5-1 and 700-5-4. Other detergents may be chemically incompatible and therefore damage the system.

NOTE: Follow state and local requirements for the handling and disposal of the empty detergent bottle. The tube is reusable.

1. Pull the tube out of the empty detergent bottle.
2. Open the new bottle of detergent and puncture the seal. Replace the cap.
3. Flip open the lid and insert the detergent inlet tube through the opening until it reaches the bottom of the bottle.

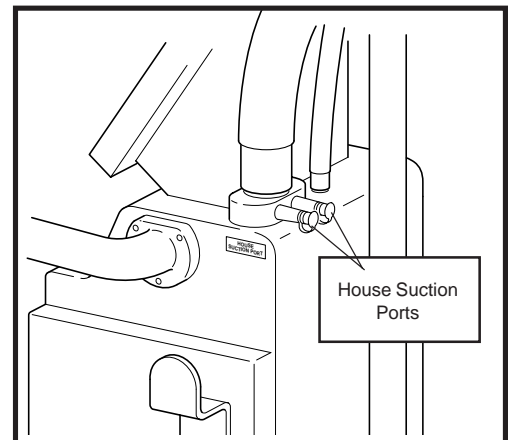


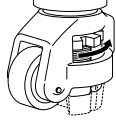
House Suction Port for Emergency Backup Use

If the Rover's vacuum suction stops functioning, the Rover is equipped with two house suction ports which can be connected to the hospital's vacuum lines to provide an alternate suction source. For optimal performance, attach a 1/4 in. [6.4 mm] I.D. suction tube from each port to the hospital's vacuum lines.

WARNING: As an alternate vacuum source, the house suction ports should be used to maintain vacuum pressure in the collection container only. They should not be used for direct suctioning of fluid waste as fluid would be pulled through the wall suction lines or HEPA filter and cause damage which will require extensive repair.

Fluid waste must be suctioned through tubing that is connected to the manifold so that it is directed into the fluid collection container.



DOCKING MODE	ROVING MODE	DISABLED FUNCTIONS	ACTION TO CLEAR ERROR	CAUSE	SOLUTION
Low Battery	—	All	Charge battery	Battery power expended.	Charge battery. See <i>Charging the Internal Battery</i> .
	Low Battery Volume Volume Disabled See Literature.	Volume Display	Charge battery	Battery power expended.	Charge battery. See <i>Charging the Internal Battery</i> .
Docking Error 1 Yes To Continue	—	None	Press YES button	Fluid coupling connection problem. Docking Station is not sitting level.	Adjust casters. 
				Rover's fluid couplings are damaged.	Call Neptune Service Center.
Docking Error 2 Yes To Continue	—	None	Press YES button	Fluid coupling disconnect problem.	Call Neptune Service Center.
				Docking Station is not retracting fluid couplings or Rover coupling mechanism is damaged.	
Docking Error 3 Volume Disabled Waiting To Dock	Docking Error 3 Volume Disabled See Literature	Volume Display	Re-dock successfully	Rover's battery charge is too low to complete the docking sequence.	Charge battery and repeat docking sequence. See <i>Charging the Internal Battery</i> .
Docking Error 4 Volume Disabled Waiting To Dock	Docking Error 4 Volume Disabled See Literature	Volume Display	Re-dock successfully	Rover/Docking Station communication error. Obstruction between the Rover and the Docking Station blocks infrared communication.	Remove obstructions or clean communication sensors and repeat docking cycle. See <i>Cleaning Recommendations</i> .
Rover/Docker Incompatible Yes To Continue	—	None	Press YES button	The Docking Station is using older software that is not working properly with newer software used by the Rover.	Software must be upgraded by Stryker service technician. Call Neptune Service Center.
Underfill Error Volume Disabled Waiting To Dock	Underfill Error Volume Disabled See Literature	Volume Display	Re-dock successfully	Sprinkler hose disconnected from top of cannister.	Reconnect sprinkler hose.
				Water supply to the Docking Station is not turned on or level sensor malfunction in the Rover.	Check water supply and re-dock the Docker. Call Neptune Service Center.
Please Verify... Water Supply... Yes to Continue	—	Occurs while docked	Press YES button	Sprinkler hose disconnected from top of cannister.	Reconnect sprinkler hose.
				Water supply to the Docking Station is not turned on or level sensor malfunction in the Rover.	Check water supply and press the YES button.
Overfill Error Volume Disabled Waiting To Dock	Overfill Error Volume Disabled See Literature	Volume Display	—	Rover disrupted while resetting the fluid volume at zero.	Re-dock successfully
				Level sensor is malfunctioning in the Rover.	Call Neptune Service Center.
Memory Error Service Needed	Memory Error Service Needed	All	—	Circuit board malfunction.	Call Neptune Service Center.

Continued

Error Messages (Continued)

DOCKING MODE	ROVING MODE	DISABLED FUNCTIONS	ACTION TO CLEAR ERROR	CAUSE	SOLUTION
Board Error Service Needed	Board Error Service Needed	All	—	Circuit board malfunction.	Call Neptune Service Center.
Offload Error Volume Disabled Waiting To Dock	Offload Error Volume Disabled See Literature	Volume Display	Re-dock successfully	Kinked hose on back of Docking Station. Offloading rate is too slow.	Reposition tube to remove kink. Call Neptune Service Center.
Vol Sense Error Volume Disabled Waiting To Dock	Vol Sense Error Volume Disabled Service Needed	Volume Display	—	Level sensor is malfunctioning in the Rover.	Call Neptune Service Center.
Fluid Vol Error Volume Disabled Waiting To Dock	Fluid Vol Error Volume Disabled See Literature	Volume Display	Re-dock successfully	The level sensor is malfunctioning or the container is leaking fluid.	Call Neptune Service Center.
Shipping Mode Dock To Use Waiting To Dock	Shipping Mode Dock To Use See Literature	Volume Display	Re-dock successfully	The Rover is shipped in this mode from Stryker.	Dock Rover once to clear the message and enable the fluid volume display.

Neptune Service Center 1-800-550-7836

Troubleshooting

PROBLEM	CAUSE	SOLUTION
Excessive air bubbles are rising in the canister while vacuum is present.	Air leaks in fittings.	Empty the canister. Call Neptune Service Center 800-550-7836.
Rover does not turn on.	Internal battery is dead.	Plug the Rover into a 20 amp outlet and turn the power switch on to recharge the battery.
	Battery disconnect switch is shut off.	Turn switch on.
Diminished suction.	Plugged Fluid HEPA filter.	Replace Fluid HEPA Filter.
	House suction port open.	Cap suction port.
	Vacuum control setting too low.	Adjust vacuum control to higher setting.
Fluid volume display is displaying scrambled bits of information.	Software malfunction.	Reset the software by unplugging the Rover and cycle the battery disconnect switch to off then on. Refer to <i>Battery Disconnect Switch</i> .
Docking Station does not inject detergent into the Rover during cleaning cycle.	Bottle of detergent is empty.	Replace bottle of detergent. Refer to <i>Replacing the Detergent Dispensing Bottle</i> .
	The end of the tube is not immersed in detergent.	Adjust the inlet tube so it touches the bottom of the detergent bottle.
	Tube is not fully secured in the inlet port located on the side of the Docking Station.	Push the tube fully into the inlet port.

Do not attempt to service any system component. In the U.S., refer operating difficulties and scheduled maintenance activities to your Stryker Representative or Customer Service.

To ensure the longevity, performance and safety of this equipment, package in original package materials when storing or transporting.

Specifications

Rover

Model: 700-1

Width: 18 in. [45.7 cm]
Depth: 25 in. [63.5 cm]
Height: 89 in. [226 cm] with power pole up.
 60 in. [152.4 cm] with power pole down

Weight: 230 lbs [104 kg] Collection tank empty
 274 lbs [124 kg] Collection tank full

Volume: 20 liters

Electrical: 120V~, 50-60 Hz, 16 amps, single phase
 12V⁻⁻⁻, 16 amp during the docking sequence

20 amp receptacle connection mandatory

Unit is internally powered while docking.

Class 1

IPX0 Ordinary Equipment



Type CF Applied Part



CSA International

UL 2601-1

IEC 60601-1

CAN/CSA-C22.2 No. 601.1-M90

Rover

Model: 700-3

Width: 18 in. [45.7 cm]
Depth: 25 in. [63.5 cm]
Height: 51 in. [130 cm]

Weight: 195 lbs [88 kg] Collection tank empty
 239 lbs [108 kg] Collection tank full

Volume: 20 liters

Electrical: 120V~, 50-60 Hz, 12 amps, single phase
 12V⁻⁻⁻, 16 amp during the docking sequence

15 amp receptacle connection

Unit is internally powered while docking.

Class 1

IPX0 Ordinary Equipment



Type CF Applied Part



CSA International

UL 2601-1

IEC 60601-1

CAN/CSA-C22.2 No. 601.1-M90

Docking Station

Model: 700-4

Width: 25 in. [63.5 cm]
Depth: 20 in. [50.8 cm]
Height: 22 in. [55.9 cm]

Weight: 90 Lbs [41 Kg]

Electrical: 120V~, 50-60 Hz, 3 amps

15 amp receptacle connection

Class 1



CSA International

• IEC 1010-1

Water Requirements

Pressure Range: 45-100 psi [2,327-5,171 mmHg]

Temperature: 40-110°F [4.4-43.3°C]

Connection: Garden hose fitting

Quality: Potable tap water

Usage: .85 gal. [3.2 liters] per cycle

Detergent Dispensing Docking Station

Model: 700-5

Width: 25 in. [63.5 cm]
Depth: 20 in. [50.8 cm]
Height: 22 in. [55.9 cm]

Weight: 90 Lbs [41 Kg]

Electrical: 120V~, 50-60 Hz, 3 amps

15 amp receptacle connection

Class 1



CSA International

• IEC 1010-1

Water Requirements

Pressure Range: 45-100 psi [2,327-5,171 mmHg]

Temperature: 40-110°F [4.4-43.3°C]

Connection: Garden hose fitting

Quality: Potable tap water

Usage: .85 - 2.6 gal. [3.2 - 10 liters] maximum depending on selected cycle.

Follow state and local requirements for disposal of biohazard materials.

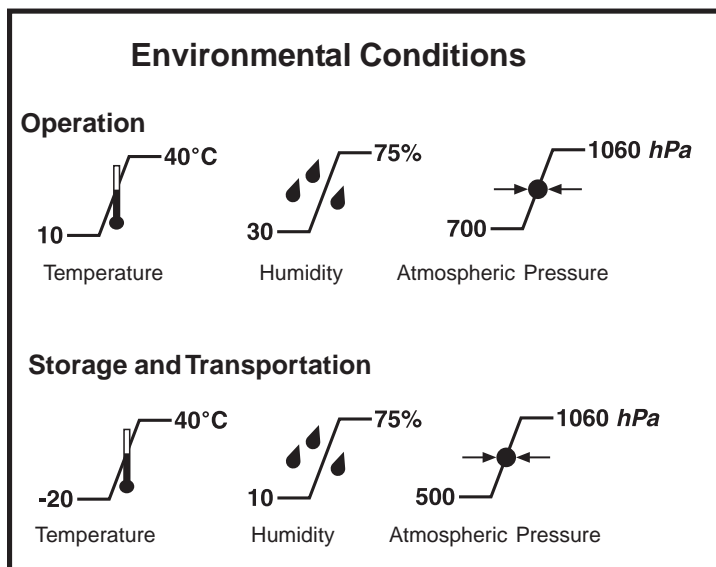
Specifications

Specifications are approximate.

Non-operator serviceable components should be serviced by an authorized Stryker Representative only. Any effort at field repair or adjustment by an unauthorized individual may invalidate your warranty.

In the event of sporadic electrical interference:

- Turn off all electrical equipment not in use in the operating room.
- Relocate electrical equipment; increase spacial distance.
- Plug operating room equipment into different outlets.



WARRANTY

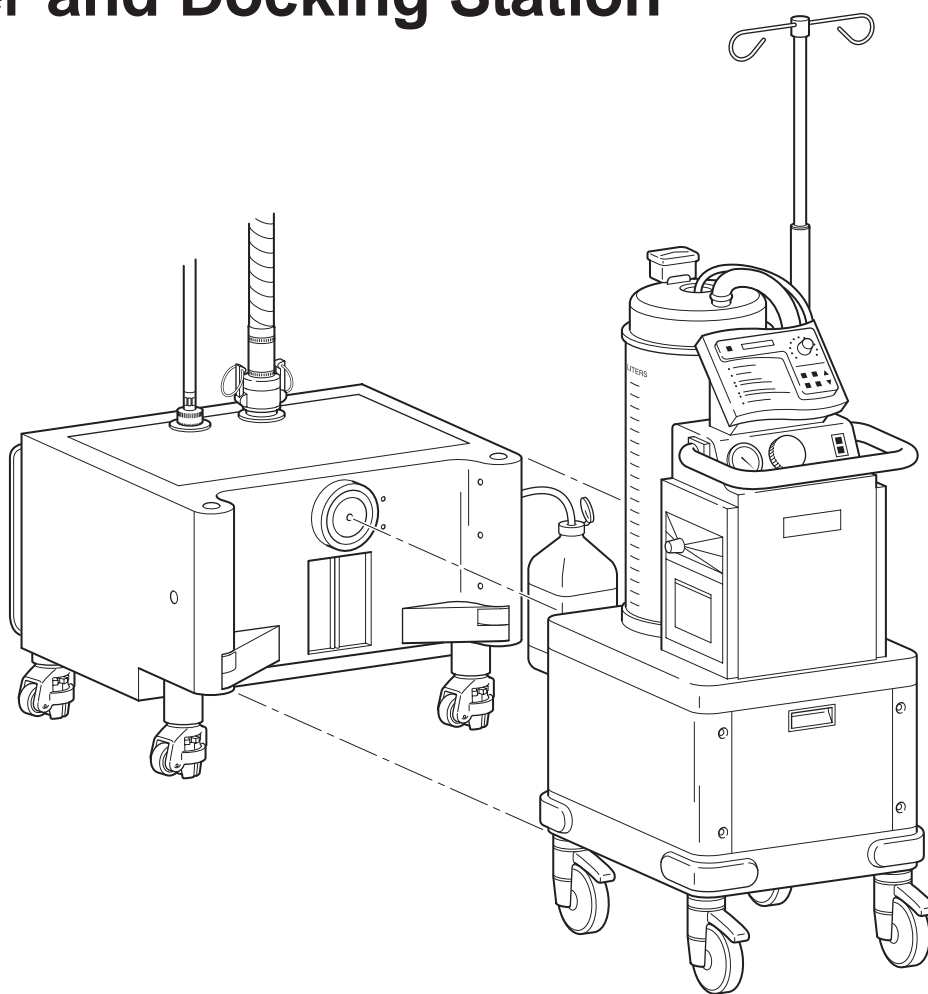
Stryker Instruments Warranties cover parts and labor if maintained and operated in accordance with manufacturer's instructions for use. In order to ensure safe operation of Stryker Instruments' products, only Stryker Instruments' accessories should be used. Stryker Instruments reserves the right to invalidate product warranties and complimentary loaner programs if Stryker Instruments' products are used with accessories not manufactured by Stryker Instruments or if repairs are performed by any party other than an authorized Stryker Instruments repair facility.

NEPTUNE

stryker®

Instruments

Site Preparation and Installation Guide for the Rover and Docking Station



US Patent: D446,791; 5,997,733; 6,180,000; 6,222,283;
6,331,246 and other patents pending.

Instruments Division
4100 E. Milham
Kalamazoo, Michigan
(USA) 49001
1-269-323-7700
1-800-253-3210

Important Information

WARNING - CAUTION - NOTE



This symbol is used to alert the reader to important safety and precautionary information. When displayed on a device, it refers the user to accompanying instructions and identifies safety and precautionary information.

Please read this manual and follow all instructions carefully. The words WARNING, CAUTION and NOTE carry special meanings and should be carefully reviewed.

WARNING: The personal safety of the patient and/or user may be involved. Disregarding this information could result in injury to the patient and/or medical staff.

CAUTION: These instructions point out special service procedures or precautions that must be followed to avoid damaging the device.

NOTE: This provides special information to make maintenance easier or important instructions more clear.

Features

The **Rover** is a mobile unit used in the operating room to suction and collect surgical fluid and small debris from the surgical site. Optional features include a smoke evacuation unit which collects smoke from cautery procedures or laser surgery, and a powered IV pole.

The **Docking Station** is a wall mounted component of the system and is plumbed with water inlet and drain lines. The Rover interfaces with the docking station which then automatically empties and rinses the collected waste materials from the Rover's fluid collection container. A detergent dispenser automatically releases liquid detergent into the system.

Proper utilities must be available in the installation site. The user facility is responsible for preparation of the installation site and installation of the system.

Safety



WARNINGS:

- Before installing this system, read and understand the information in this manual. Familiarization with the system is important. If you have any questions, contact your Stryker Instruments Representative or Stryker Neptune Service Center at 1-800-550-7836.
- DO NOT use this equipment in the presence of flammable anesthetic mixture with air or with oxygen or nitrous oxide.
- Surgical fluid waste is potentially infectious after collection.
- Follow state and local requirements for disposal of biohazard materials.
- The rover weighs 246 lbs [112 Kg]. More than one person will be required to unpack and safely lift the unit off the shipping pallet. Failure to comply may result in personal injury.
- The docking station weighs 90 lbs [41 Kg]. More than one person will be required to unpack and safely lift the unit off the shipping pallet. Failure to comply may result in personal injury.
- Keep hands away from the Docking Station doors. The docking mechanism could inadvertently be triggered to extend from the docking station and cause personal injury.
- Never place hands between the Rover and Docking Station when initiating the docking procedure as personal injury can occur.
- Read the important safety information provided on the bottle of Detergent REF 700-005-004.
- Use only Stryker approved Detergent REF 700-005-004. Other detergents may be chemically incompatible and therefore damage the system. Contact your Stryker sales representative or Stryker Customer Service at 1-800-253-3210.

1. Disposal Area and Utility Requirements

The Docking Station

The docking station should be installed in a disposal area near the operating rooms where the rover will be used. Consult with your facility personnel to ensure that your installation site is acceptable.

The designated area must be evaluated for ease of installation with the following considerations:

Electrical Requirements

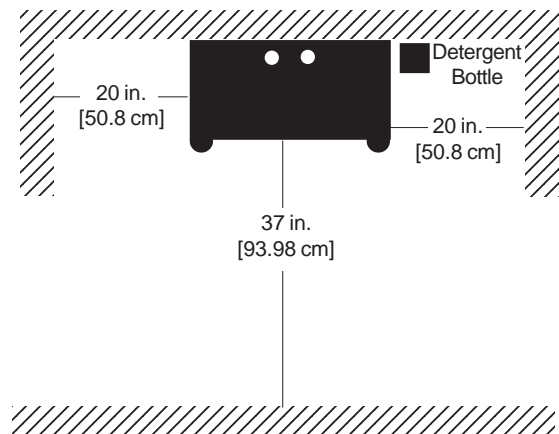
- 120 V, 60 Hz, 15 amp outlet with protective earth ground.

Plumbing Requirements

- Tap water with dedicated shut-off valves. Inlet accepts garden-hose style fitting supplied with the docking station.
- Water usage is approximately 11 liters per rinse cycle at default settings. (Water usage is adjustable).
- Plumb with a 1.0 in. PVC hose to a floor drain or permanent service connection per local plumbing codes.
- Recommended drain plumbing connection should not exceed 8 ft from the docking station.
- Ensure plumbing configuration is not susceptible to water hammer conditions.

Space Requirements

- The sides of the docking station require a minimum of 20 inches of clearance to allow access through the unit's service doors. There should be a minimum of 37 inches of clearance in front of the docking station to accommodate the rover. A bottle of detergent will sit on the floor at the right side of the docking station.



Installation Layout

The Rover

Electrical Requirements

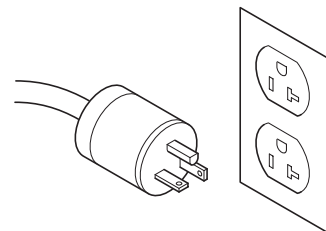
- REF 700-001-000 requires a 120 V, 60 Hz, 20 amp electrical outlet with protective earth ground.
- REF 700-003-000 requires a 120 V 60 Hz, 15 amp electrical outlet with protective earth ground.
- REF 700-007-000 requires two 1.5 V AA batteries. No electrical connections are need for this model.

Plumbing Requirements

- No plumbing connections are needed for the rover.

Space Requirements

- See above Installation Layout diagram.



2. Unpacking the Rover

CAUTION: The rover weighs 246 lbs [112 Kg]. More than one person will be required to unpack and safely lift the unit off the shipping pallet. Failure to comply may result in personal injury.

3. Unpacking the Docking Station



WARNING: The docking station weighs 90 lbs [41 Kg]. More than one person will be required to unpack and safely lift the unit off the shipping pallet. Failure to comply may result in personal injury.

Container Contents

- Docking Station
- 6 ft. [1.83 m] water inlet hose
- 6 ft. [1.83 m] waste outlet hose
- Detergent inlet tube.

Recommended Additional Installation Equipment

- Stryker Docking Station Mounting Kit REF 700-004-500.
- Anti-siphon device for inlet water supply compliant with state and local water supply requirements.

NOTE: The docking station is equipped with an internal anti-siphon device (ANSI/NSF-61; ASSE 1024; CSA B64.6).

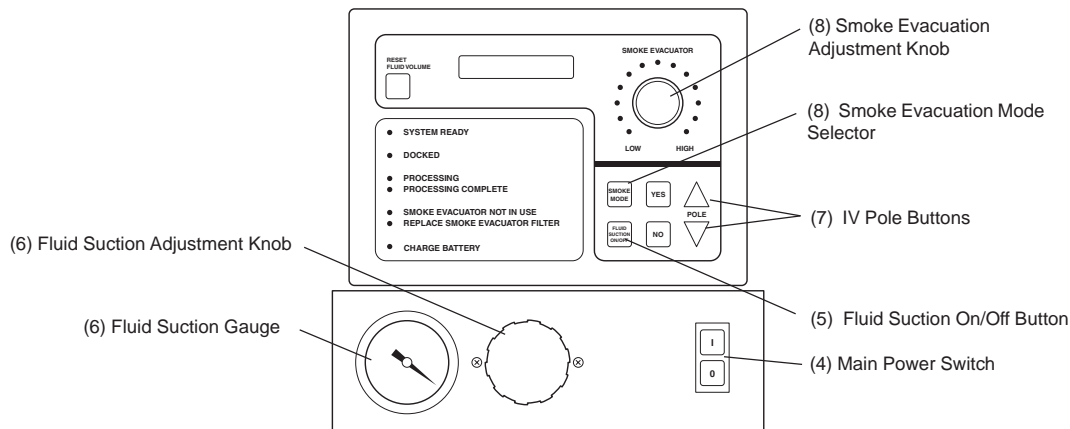
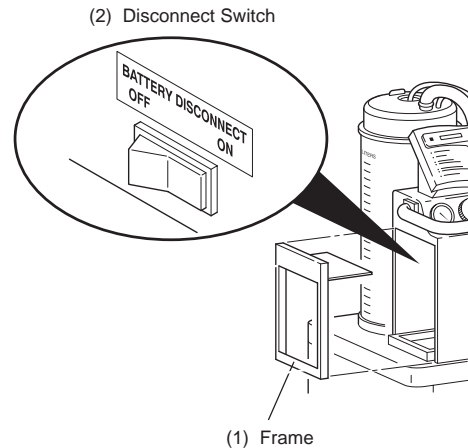
4. Rover Installation Testing Procedures

NOTE: These testing procedures apply to rover models REF 700-001-000 and 700-003-000 only.

Activate the internal battery located inside the Rover.

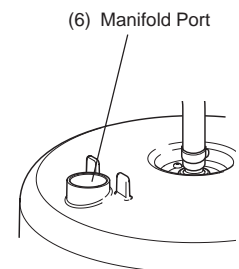
1. Grasp and pull the frame from the compartment on the side of the rover as shown.
2. A disconnect switch is located in the top center of the compartment. Place the switch in the ON position.
3. Re-install the frame.

NOTE: Neptune's fluid volume display shows this message: **Shipping Mode/Dock to Use/Waiting to Dock**. The display will not provide any other status information until this message is cleared. The message will clear automatically during the docking station installation procedure when the rover is docked and the initial docking cycle is completed.



Test the suction

4. Plug the rover into a wall outlet and turn it on with the main power switch.
5. Activate the vacuum pump by pressing the fluid suction on/off button.
6. While the vacuum pump is running, block the manifold port. Turn the fluid suction adjustment knob and observe the fluid suction gauge to ensure that the vacuum level changes. Increase the suction level to the maximum level; the gauge should indicate a minimum vacuum level of 17.5 inHg. Refer to the *Troubleshooting* information in the Neptune Waste Management System manual if the proper vacuum level is not achieved.



Test the IV Pole (if equipped)

7. With the power turned on, press the arrow buttons to raise and lower the pole. Ensure the pole operates smoothly.

Check the Smoke Evacuator (if equipped)

8. Press the smoke evacuator mode selector and turn the smoke evacuation adjustment knob clockwise until all lights surrounding the knob are illuminated. Ensure the smoke evacuator operates.

5. Docking Station Installation Procedures



WARNINGS:

- Keep hands away from the docking station doors. The docking mechanism could inadvertently be triggered to extend from the docking station and cause personal injury.
- Never place hands between the Rover and Docking Station when initiating the docking procedure as personal injury can occur.
- Read the important safety information provided on the bottle of Detergent REF 700-005-004.

CAUTION: Use only Stryker approved Detergent REF 700-005-004. Other detergents may be chemically incompatible and therefore damage the system.

NOTE: See *Specifications* to determine if the anti-siphon device supplied with the docking station meets your local requirements. If it does not, obtain a anti-siphon device which will meet your requirements and install it near the shut off valve on the inlet water supply.

Positioning the Docking Station

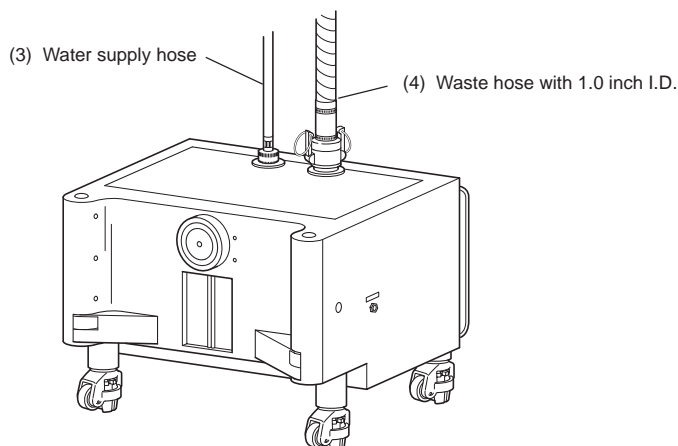
1. Place the docking station against the wall at the installation site.

NOTE: If possible, position the docking station to align fastening hardware with wall studs.

2. Loosely fasten the docking station to the wall. This ensures the docking station remains in the final installation site but also allows for caster adjustment.

Plumbing Connections

3. Connect the water supply hose to tap water source.
4. Attach the waste hose to the hospital drain system. Refer to your local plumbing codes for specific requirements.



Docking Station Installation Procedures cont'd

Aligning the Rover and Docking Station

5. Adjust the height of each docking station caster so that the magnet is precisely level and flush with rover's strike plate.

NOTE: It is important to level the docking station and align the inlet and outlet couplings to those of the rover by adjusting caster height.

6. Place the rover directly in front of the docking station and view the magnet and strike plate from the side. Adjust the height of both front casters and both rear casters until magnet and strike plate surfaces are flush.

NOTE: To remove a gap at the top of the magnet, decrease the height of the front casters or increase the height of the rear casters.

Utility Connection

7. Plug the docking station into a wall outlet. Turn on the main power switch located on the back of the unit.
8. Turn on the tap water source for the docking station.

Detergent Source Connection

9. Secure the detergent inlet tube to the inlet port. Remove the cap from the detergent bottle and puncture the seal. Insert the detergent inlet tube until it reaches the bottom of the bottle.

Testing the Docking Procedure

10. Fill the rover's fluid collection container with a minimum of two (2) liters of water then dock the rover in the docking station. Ensure that fluid couplings engage fully and simultaneously.

11. Repeat the docking procedure several times to verify proper engagement.

NOTE: Water should not drip from the inlet and outlet couplings during docking.

12. Once proper engagement is achieved, secure the docking station to the wall.

13. Fill the rover fluid collection container with a minimum of two (2) liters of water then test the docking station again by engaging the rover and completing a cleaning cycle.

Verify the following during the docking sequence:

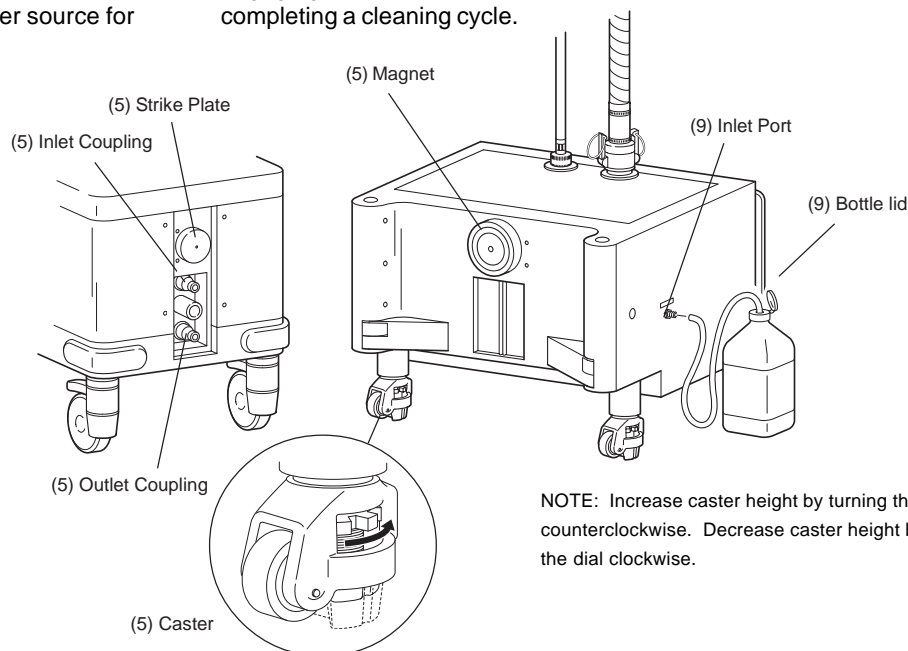
- Proper engagement of the rover and docking station
- No leakage at couplers
- No leakage at rinse water inlet connection
- Proper drainage from discharge hose to facilities plumbing

14. After the docking sequence is completed, separate the units.

Charging Rover's Battery

15. Rover models REF 700-001-000 and 700-003-000 only: Plug the rover power cord into a wall receptacle and turn the power on with the main power switch to recharge the internal battery. Verify that the screen displays "Vol(Liters) 0.00"

NOTE: The rover should remain plugged into a power receptacle and turned on to ensure the battery remains fully charged.



NOTE: Increase caster height by turning the dial counterclockwise. Decrease caster height by turning the dial clockwise.

Specifications

Rover

Model: 700-001-000

Width: 18 in. [45.7 cm]

Depth: 25 in. [63.5 cm]

Height: 89 in [226 cm] with IV pole up.
60 in [152.4] with IV pole down

Weight: 246 lbs [112 kg] Collection tank empty
290 lbs [132 kg] Collection tank full

Volume: 20 liters

Electrical: 120 V~, 50-60 Hz, 16 amps, single phase
12 V $\overline{\text{---}}$, 16 amp during the docking sequence

20 amp receptacle connection mandatory

Unit is internally powered while docking.

Equipment Type:  Type CF Applied Part

Class 1

Enclosure Protection: IPX0 Ordinary Equipment

Approval: CSA International



UL 2601-1
IEC 60601-1
CAN/CSA-C22.2 No. 601.1-M90

Rover

Model: 700-003-000

Width: 18 in. [45.7 cm]

Depth: 25 in. [63.5 cm]

Height: 51 in. [130 cm]

Weight: 198 lbs [90 kg] Collection tank empty
242 lbs [110 kg] Collection tank full

Volume: 20 liters

Electrical: 120 V~, 50-60 Hz, 12 amps, single phase
12 V $\overline{\text{---}}$, 16 amp during the docking sequence

15 amp receptacle connection

Unit is internally powered while docking.

Equipment Type:  Type CF Applied Part

Class 1

Enclosure Protection: IPX0 Ordinary Equipment

Approval: CSA International



UL 2601-1
IEC 60601-1
CAN/CSA-C22.2 No. 601.1-M90

Rover

Model: 700-007-000

Width: 19 in. [48 cm]

Depth: 21 in. [53 cm]

Height: 42 in. [107 cm]

Weight: 110 lbs [50 kg] Collection tank empty
154 lbs [70 kg] Collection tank full

Volume: 20 liters

Electrical: 3 V $\overline{\text{---}}$
Battery powered

Equipment Type:  Type CF Applied Part

Enclosure Protection: IPX0 Ordinary Equipment

Approval: CSA International



UL 2601-1
IEC 60601-1
CAN/CSA-C22.2 No. 601.1-M90

Detergent Dispensing Docking Station

Model: 700-005-000

Width: 25 in. [63.5 cm]

Depth: 20 in. [50.8 cm]

Height: 22 in. [55.9 cm]

Weight: 90 Lbs [41 Kg]

Electrical: 120 V~, 50-60 Hz, 3 amps
15 amp receptacle connection

Equipment Type: Class 1

Approval: CSA International

• IEC 1010-1



Water Requirements

Pressure Range: 45 to 100 psi [2,327 to 5,171 mmHg]

Anti-siphon Device: ANSI/NSF-61; ASSE 1024; CSA B64.6

Temperature: 40 to 110°F [4.4 to 43.3°C]

Connection: Garden hose fitting

Quality: Potable tap water

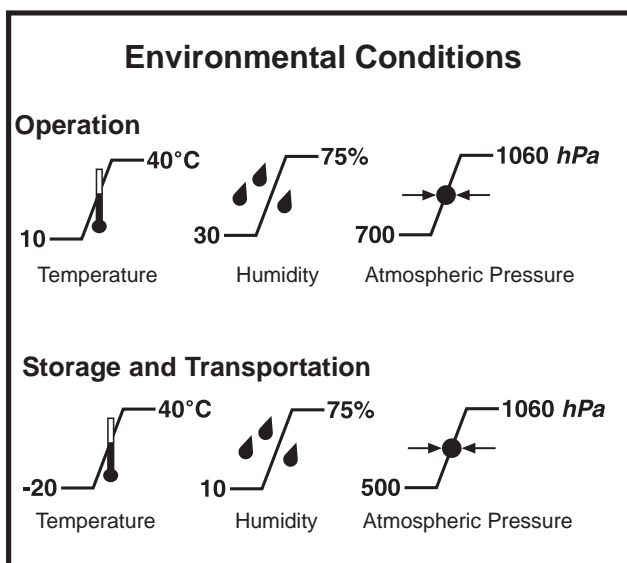
Usage: 2.9 gal. [11 liters] at default settings and will vary depending on the selected cycle.

Specifications are approximate.

Non-operator serviceable components should be serviced by an authorized Stryker representative only. Any effort at field repair or adjustment by an unauthorized individual may invalidate your warranty.

In the event of sporadic electrical interference:

- Turn off all electrical equipment not in use in the operating room.
- Relocate electrical equipment; increase spacial distance.
- Plug operating room equipment into different outlets.



Neptune Service Center
1-800-550-7836

WARRANTY

Stryker Instruments Warranties cover parts and labor if maintained and operated in accordance with manufacturer's instructions for use. In order to ensure safe operation of Stryker Instruments' products, only Stryker Instruments' accessories should be used. Stryker Instruments reserves the right to invalidate product warranties and complimentary loaner programs if Stryker Instruments' products are used with accessories not manufactured by Stryker Instruments or if repairs are performed by any party other than an authorized Stryker Instruments repair facility.

Neptune Error Messages

If a problem exists with the Neptune® System the user will be given an error message that corresponds to an identifiable problem. Each error message will be displayed via the user interface panel (UIP). The following outlines errors that may occur and possible causes.

NOTE: Table 1.0 lists the docking sequence for the Rover in 15 steps. A failure during the docking sequence will generate one of the errors listed below. The current step in the sequence (at the time of failure) will indicate which component caused the failure. Using Table 1.0 in conjunction with the description of errors should point to the faulty component based on which step the fault was generated.

Docking Error One

This occurs when the prong on the actuator head does not make contact with the precision switch in the rover within 10 seconds of commencement of the docking sequence. This may be caused by misalignment between rover and docker, insufficient pneumatic pressure, or the solenoid valve not exhausting. This is usually caused by a failure at step 8 in table 1.0

Docking Error Two

The precision switch is normally open prior to docking, and closes on contact with the actuator prong. This is what indicates the rover and docker have successfully connected. If the switch is stuck in the shut position an error occurs because the docker has no way of verifying the connection has been made. This is usually caused by a failure at step 5 in table 1.0

Docking Error Three

The rover is powered by the internal battery during the docking cycle. When power is lost during the docking sequence a docking error three occurs. Power loss can be caused by an intermittent connection or by a battery that has been drained of its charge.

Docking Error Four

Only occurs when there is a communication loss between the docker and the rover during the docking cycle. This is normally caused for two main reasons; power loss to the docker, or a malfunction of the LEDs. This is usually caused by a failure at step 5 in table 1.0 (if failure occurs near the beginning of the docking cycle)

Power loss can be caused by a bad power supply or a tripped circuit breaker. The circuit breaker normally trips when the offload pump draws excessive current. The impellor in the pump may swell and cause the motor to seize. The increased current draw trips the circuit breaker and shuts down the docker.

A malfunction of the LEDs may be caused by physical blockage of the transmission signal. Foreign objects such as dust, lint, and fluids may accumulate on the LEDs and disrupt communications between the rover and docker. This may also be caused by a severed transmission line leading to the IR transmitter.

Offload Error

An offload error is given when the rover offloads too slowly. The offload must not exceed a rate of 10 seconds per liter for version 5.1 and lower, and 20 seconds per liter for version 5.2 and above. Generally this is caused by two things; kinks and clogs in the rover or docker waste line, or problems with the volume sensing components. This is usually caused by a failure at step 11 in table 1.0 (if unit offloads completely)

Clogs in the waste line can be temporarily dislodged by a procedure known as “burping” the rover. This is done by creating suction in the canister of about 15” Hg and then depressing the waste coupler and releasing. Repeat this process three to four times waiting two seconds in between each time. This will free any debris that may be blocking the offload of waste fluid. Dock the rover again to offload remaining fluid.

A problem with the volume sensing components normally involves the float sensor. If the sensor is not permitted to reach the bottom, then there is no way of indicating when the fluid has been completely offloaded. This may often cause the offload timer to exceed the time allotted per liter and disconnect the rover giving an offload error. (even if the fluid has been completely offloaded)

Incompatibility:

There are two causes for this problem. One is when the software versions between the rover and docker are actually incompatible. The second, more probable cause is when misalignment or a physical blocking of only one of the IR transceiver board's LEDs has caused a communication error. This causes a failure in such a way that communication is allowed one way but no reply is received, simulating incompatible software. This is usually caused by a failure at step 5 in table 1.0

Fluid volume error

This error code was designed to detect a leak. At the end of the offload cycle the prefill is injected into the canister bottom. An insufficient amount during prefill will cause an underfill error. If however the proper amount is distributed (200ml) and for any reason that amount *decreases*, the result will be a fluid volume error.

Underfill

An underfill error occurs when the rover receives less water than expected during the prefill cycle, or the volume sensing indicates that it did. This can be caused by insufficient water pressure which would mean there is physically not enough fluid present. An alternative reason would be a malfunction in volume sensing components, or an improper calibration which would indicate an improper reading. (this could occur even if the prefill is at the proper level) This is usually caused by a failure at step 13 in table 1.0

Overfill

An overfill error occurs when the rover receives more water than expected during the prefill cycle, or the volume sensing indicates that it did. This can be caused by excessive water pressure which would mean there is physically too much fluid present. An alternative reason would be a malfunction in volume sensing components, or an improper calibration which would indicate an improper reading. (this could occur even if the prefill is at the proper level) This is usually caused by a failure at step 13 in table 1.0

NOTE: This error represents a higher fluid level than normal. If a foreign object were present and prevented the float sensor from resting at its normal level, then this error may also occur. The system does not differentiate from a rise in the float sensor due to increased fluid volume or a rise caused by a foreign object.

Volume Sense Error

This is caused when a voltage level at the input to the Analogue to Digital (A to D) conversion board exceeds 4.1vDC. During the calibration procedure the maximum fluid volume level is set to twenty liters. This is represented electrically by 4.1vDC. Should the volume exceed that amount a volume sense error is generated. This may also occur if the volume sensing components malfunction.

Memory Error

This occurs when the EPROM checksum is lost. To repair this problem cycle the battery power switch with AC power OFF. If this does not correct the problem, reference the RESET MEMORY function of diagnostics mode for the corresponding software version of the rover. Reset the memory and recalibrate the Neptune® rover.

Sequence	Description of Events
Step 1	Rover contacts docker cams
Step 2	Docker doors open to allow access to actuator head
Step 3	Optical switches activate
Step 4	Electromagnet energizes to hold rover in place
Step 5	I.R. communications commence between rover and docker
Step 6	Docker compressor starts
Step 7	Actuator heads extend to meet rover couplers
Step 8	Prong on actuator contacts precision switch
Step 9	If macerator is in place, macerator runs for 30 seconds
Step 10	Offload cycle begins, offload pump starts
Step 11	Canister empty, rinse cycle starts
Step 12	Offload cycle complete, offload pump stops, rinse cycle stops
Step 13	Pre-fill cycle fills canister with 200ml
Step 14	Actuator head retracts
Step 15	LCD displays "Extra Rinse Y/N"

Table 1.0 Neptune Docker Sequence of Events

Rover 5.0 – 5.1 Diagnostic Options

NOTE: IF a rover has a software version older than 5.0 the software should be upgraded. Critical software features were introduced with version 5.0. It is highly recommended they upgrade the operational software. Please contact Stryker Instruments to obtain authorization for the upgrade procedure.

Enter Diagnostic Mode by Performing the Following:

Hold SMOKE MODE and POLE DOWN ▼ buttons at the same time, and turn on either AC power or battery power. DIAGNOSTIC MODE will then be momentarily displayed, followed by REVIEW ERRORS which is the first menu option. Use the arrow buttons to scroll to additional options. A description of each menu option is provided below.

Review Errors

View the last 5 errors, as well as the docking cycle on which they occurred
Display the current number of successful docking cycles
Reset the error history. This will not affect the current docking cycle count.

Shipping Mode

The rover is shipped in this state. It will not display fluid volume until it is docked. This ensures the docking station is installed prior to use. To clear this readout and return the rover to an operational state simply dock the rover.

External ADC

Selecting this option will display the reading from the external analog to digital converter in the fluid transducer to the user. This information will be updated once every second until the user presses the NO button.

Display Units

This allows the user to view fluid volume in different units of measure. Available choices are Liters, Milliliters, or CC's.

Autodown

Cycles the autodown feature either on or off. When on the autodown is on the i.v. pole will automatically lower when the rover AC POWER switch is turned off.

Exit Menu

Exits the diagnostics mode menu completely. The user will be returned to the operational screen of the Neptune.

Calibration Mode

When this mode is selected, the Rover will display CALIBRATION MODE ↑↓. At this point you must press the YES, UP, DOWN, & YES buttons in sequence to enter the calibration menu. Pressing the NO button will return the rover to the 1st level of the diagnostic mode.

Clear Errors

All current errors are cleared. If a pressure sensor is installed, the prefill volume is set to zero. If a float sensor is installed, the prefill volume is set to 250 ml.

Smoke Mode

When this is selected, Rover displays "700-3 Rover? Y/N". If yes is selected, the smoke blower is disabled. If no is selected, the smoke blower is enabled, and the HEPA filter time is reset to 120 hours.

Calibrate

This will allow the user to select the type of transducer, and calibrate the Rover.

Dock Control

This allows the rover to be manually docked with a docker Docker. Dock control allows the user to control the following:

Couplings Extend/Retract	Offload Pump On/Off
Sprinkler On/Off	Detergent Pump On/Off cycle
Undock	

Macerator Off

This function turns the macerator off.

Macerator On

This function turns the macerator on.

Smoke RF Test

If this option is selected, the main controller sends a command to the Smoke Micro, and receives information back from the Smoke Micro. The Rover then displays the corresponding information on the LCD display.

Read Memory

In this option, the user will be able to read individual bytes from EEPROM. This option is reserved for Stryker Instruments design engineers only.

Write Memory

In this option, the user will be able to write individual bytes to EEPROM. This option is reserved for Stryker Instruments design engineers only.

Reset Memory

Default values are stored in the EEPROM, and checksum is reset.

NOTE: this WILL remove the calibration values stored in the EPROM on the main control board.

When this mode is selected, a message will be displayed that asks the user to confirm this selection. If the user presses no, then the EEPROM will not be reset. If the user presses YES the EEPROM will be reset. This can be useful in clearing the memory prior to a calibration procedure.

Reset FL Filter (Software Ver 5.1 and above)

This will allow the user to reset the counter for the fluid suction HEPA filter. The counter counts down from 500 hours.

Battery Override

Overrides the battery

Exit Menu

This option will return the user from the calibration menu to the diagnostic menu.

Rover 5.2 Diagnostic Options

NOTE: IF a rover has a software version older than 5.0 the software should be upgraded. Critical software features were introduced with version 5.0. It is highly recommended they upgrade the operational software. Please contact Stryker Instruments to obtain authorization for the upgrade procedure.

Enter Diagnostic Mode by Performing the Following:

Hold SMOKE MODE and POLE DOWN ▼ buttons at the same time, and turn on either AC power or battery power. DIAGNOSTIC MODE will then be momentarily displayed, followed by REVIEW ERRORS which is the first menu option. Use the arrow buttons to scroll to additional options.

A description of each menu option is provided under the 5.0 – 5.1 diagnostics options section. 5.2 software added the ability to change each parameter of the docking cycle and to reset the smoke HEPA filter hours. All other menu options remained unchanged. A description of the new features added in 5.2 software is provided below.

Adjusting Docking Cycle

To access the docking cycle parameters scroll using the POLE DOWN ▼ button to DOCKING CYCLE ↑↓, then press YES. Next, PLEASE SELECT CYCLE OPTIONS will be displayed.

Each of the following options represents one step in the offload cycle. The software allows the user to customize the docking cycle for each surgical procedure. (i.e. increasing pretreatment amount and delay to allow the enzymatic detergent additional time to soak.) To adjust each of the following options scroll down using the arrow buttons ▲ ▼, press YES to select, and use arrow buttons ▲ ▼ to adjust values. When adjustments are complete press YES to continue to next option.

Docking Cycle Options

PRETREAT 20 ML/L determines how much detergent will be added to the waste fluid in the canister prior to offloading. (Ratio of X amount of detergent per Liter of waste)

DELAY 0 SEC determines the amount of time the detergent will pretreat the waste fluid in the canister.

PRERINSE 20 SEC determines the amount of time the sprinkler will run following the offload of waste.

INJECTION 20 ML determines the amount of detergent that will be distributed into the canister prior to the sprinkler wash cycle.

WASH 30 SEC entry determines the amount of time the sprinkler/wash cycle will run.

OF CYCLES determines how many times injection and wash cycle will repeat.

MACERATOR ? NO determines if maceration cycle will run or not.

If the unit was fielded with 5.2 software then the default (NO) is correct. If the software has been upgraded, there is a possibility that a macerator is still installed. (in which case it is important that YES is selected)

Use arrows to scroll to EXIT MENU ↑↓ and press YES to exit Diagnostic Mode.

Reset Smoke Filter Hours

5.2 software also allows the user to reset the smoke HEPA filter hours. The timer is a countdown timer that counts down from 120. To reset the hours after changing the HEPA filter, scroll to RESET SM FILTER and press YES.

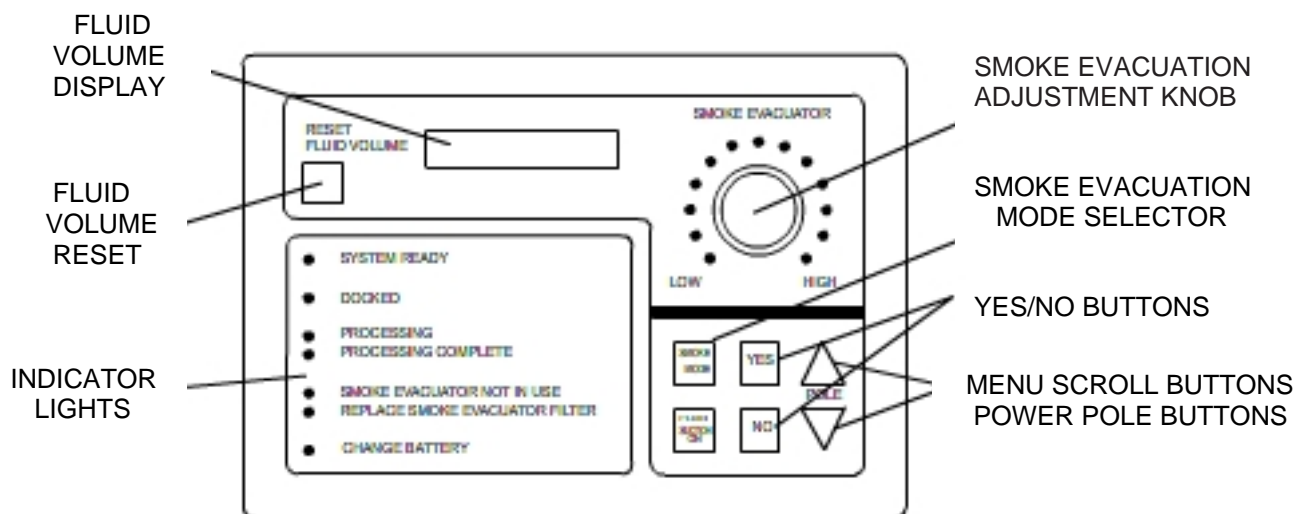
Resetting the Fluid and Smoke HEPA Filter Timers

NOTE:

- Ensure the Rover software is version 5.1 or greater to reset the fluid suction or smoke evacuator HEPA filter timers. The software version will appear on the Fluid Volume display when the Rover is initially turned on.
- The Rover will provide a filter replacement prompt on the display when either the fluid or smoke filter needs to be replaced.
- Rovers without a smoke evacuator do not have a SMOKE MODE button. However, pressing the area located above the FLUID SUCTION ON/OFF button (left of the YES button), will act like a SMOKE MODE button as described in step 2.

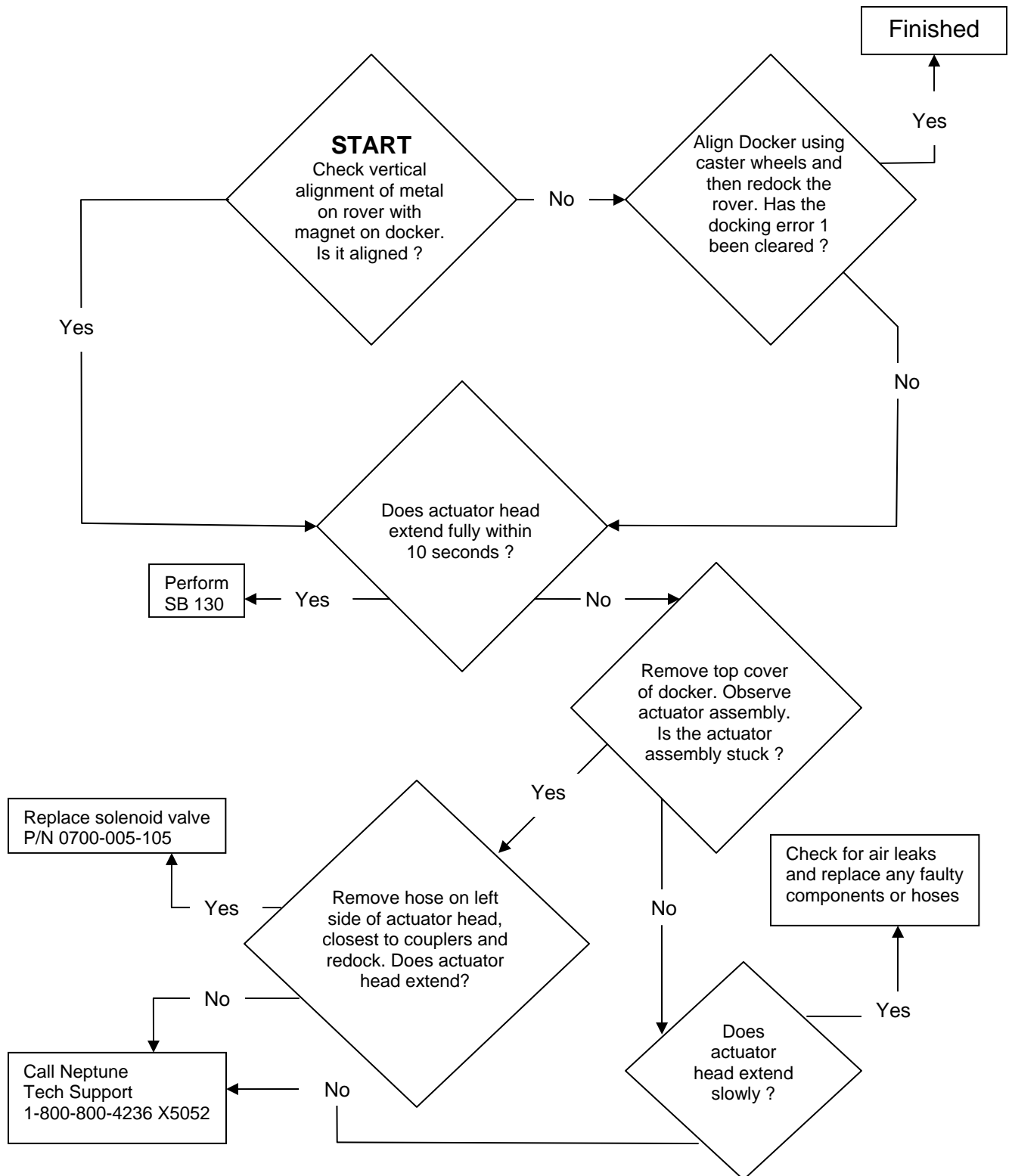
If the filter is replaced before the timer runs out, perform the following procedure:

1. Ensure the power plug is connected and the Power ON/OFF switch is in the OFF position.
2. While holding down the SMOKE MODE button (or area) and the Power POLE Adjustment DOWN arrow button simultaneously, push the Power ON/OFF switch to the ON position. Menu options will appear on the Fluid Volume display.
3. Press the Power POLE Adjustment arrow buttons to cycle through the menu options until either RESET FL FILT (fluid filter) or RESET SM FILT (smoke filter) appears on the Fluid Volume display.
4. Press the YES button on the control panel to reset the selected timer. FL FILT (HR) 500 (fluid filter) or SM FILT (HR) 120 (smoke filter) will appear briefly on the Fluid Volume Display to indicate the timer has been reset.
5. To exit, press the Power POLE Adjustment arrow buttons to cycle through the menu options until EXIT MENU appears on the Fluid Volume display. Press the YES button on the Control Panel to exit the menu.



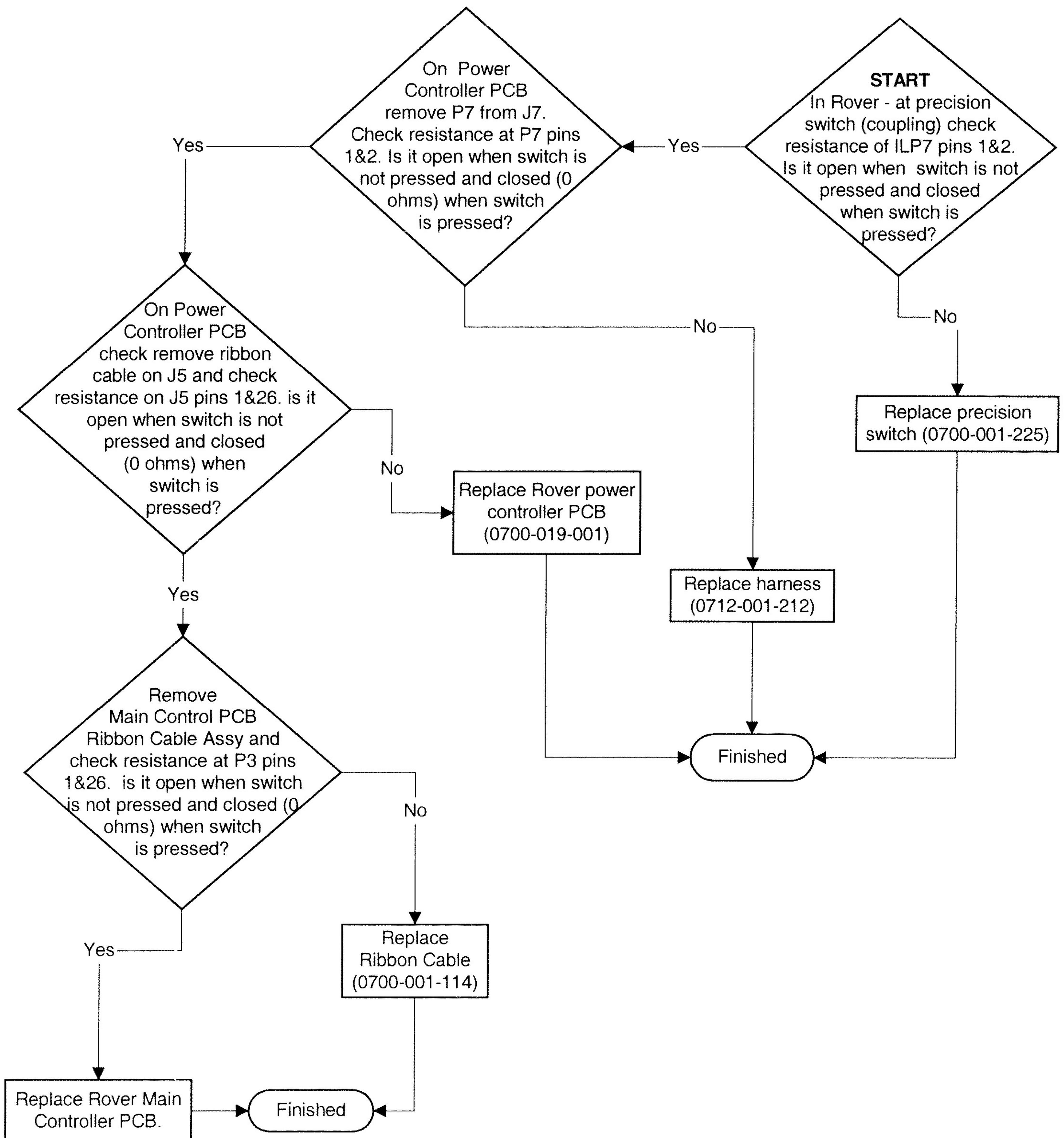
Troubleshooting Common Errors

Docking Error 1



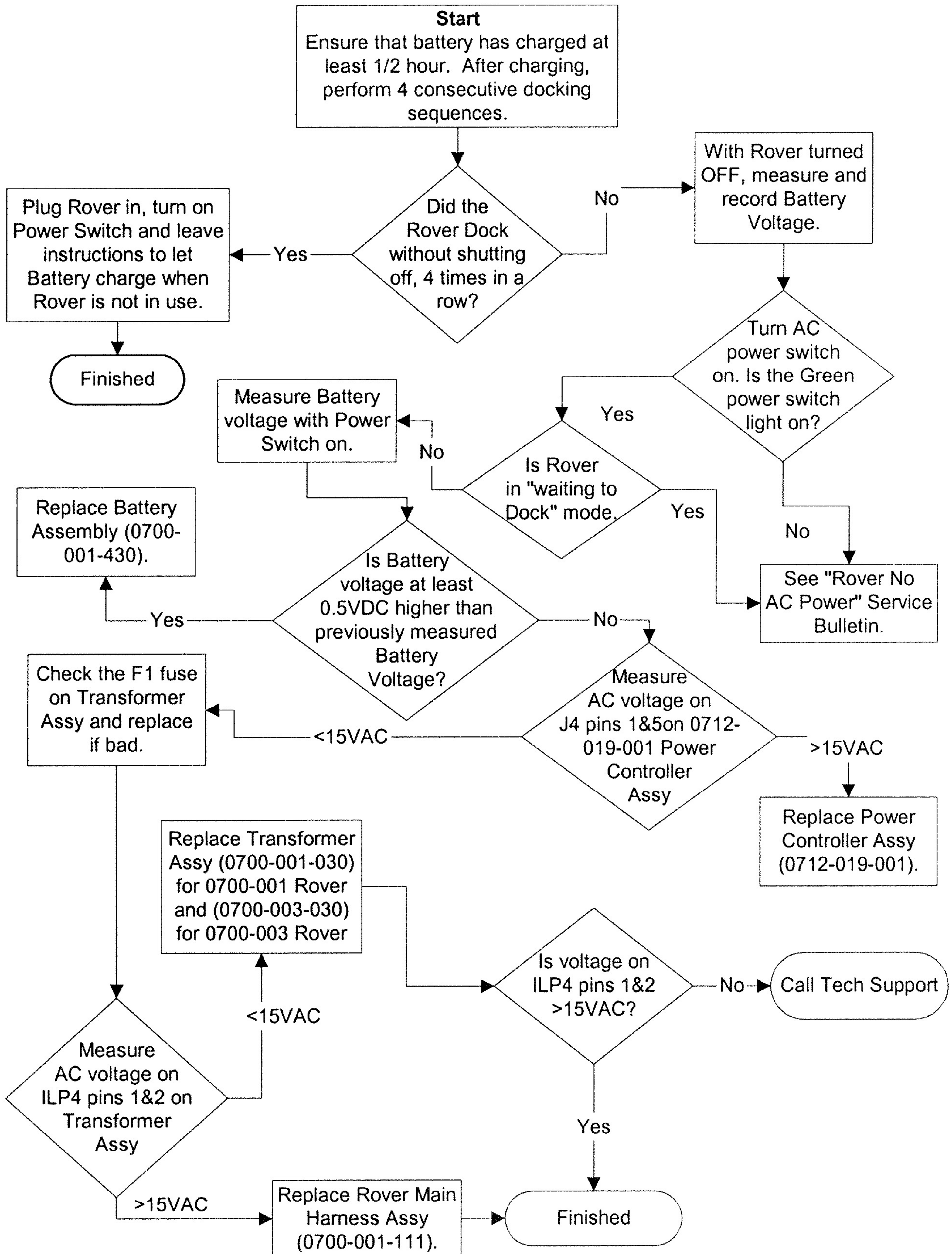
Docking Error #2

(Coupled Switch is closed before docking cycle begins)



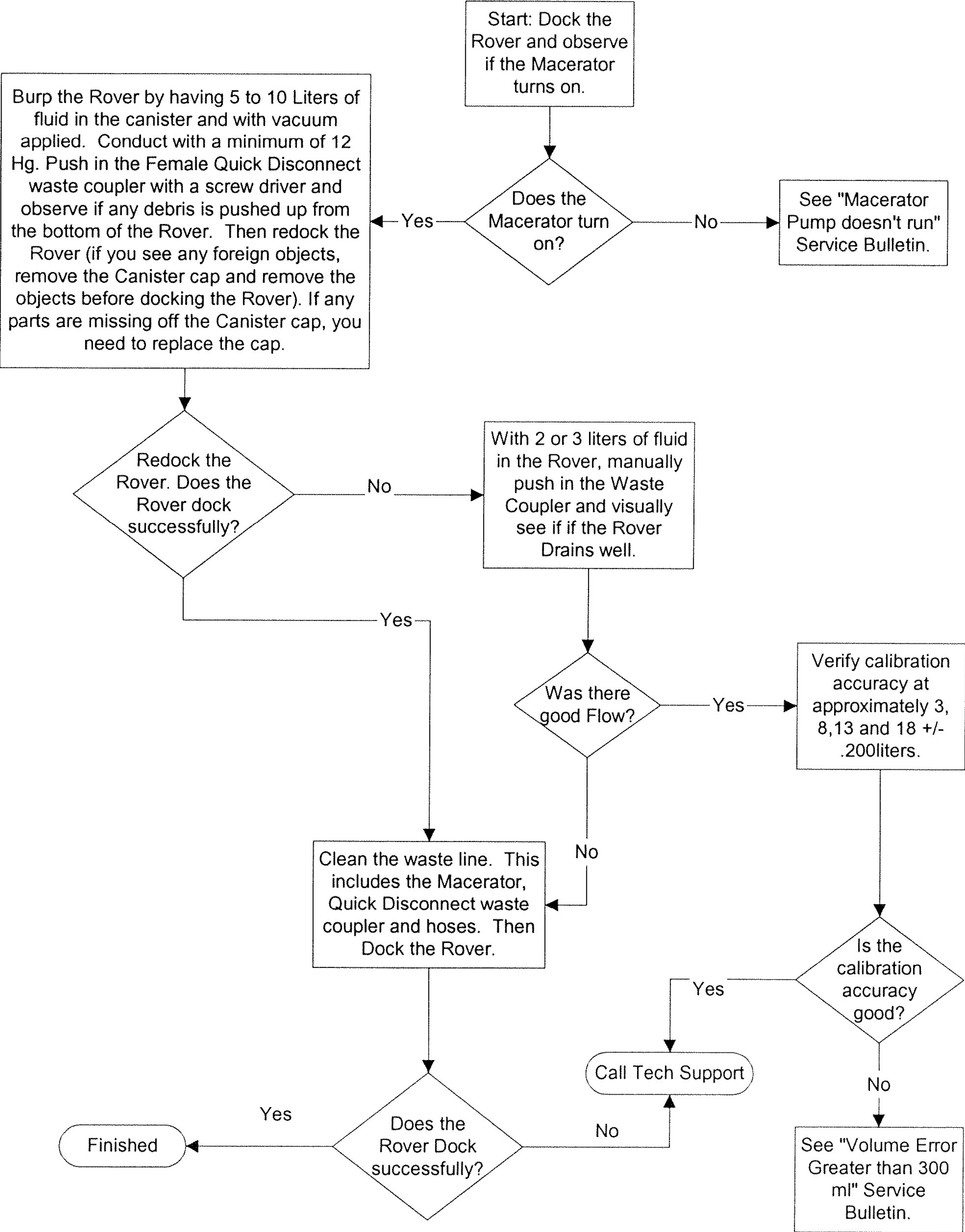
Docking Error #3

(Battery Dead during docking sequence)



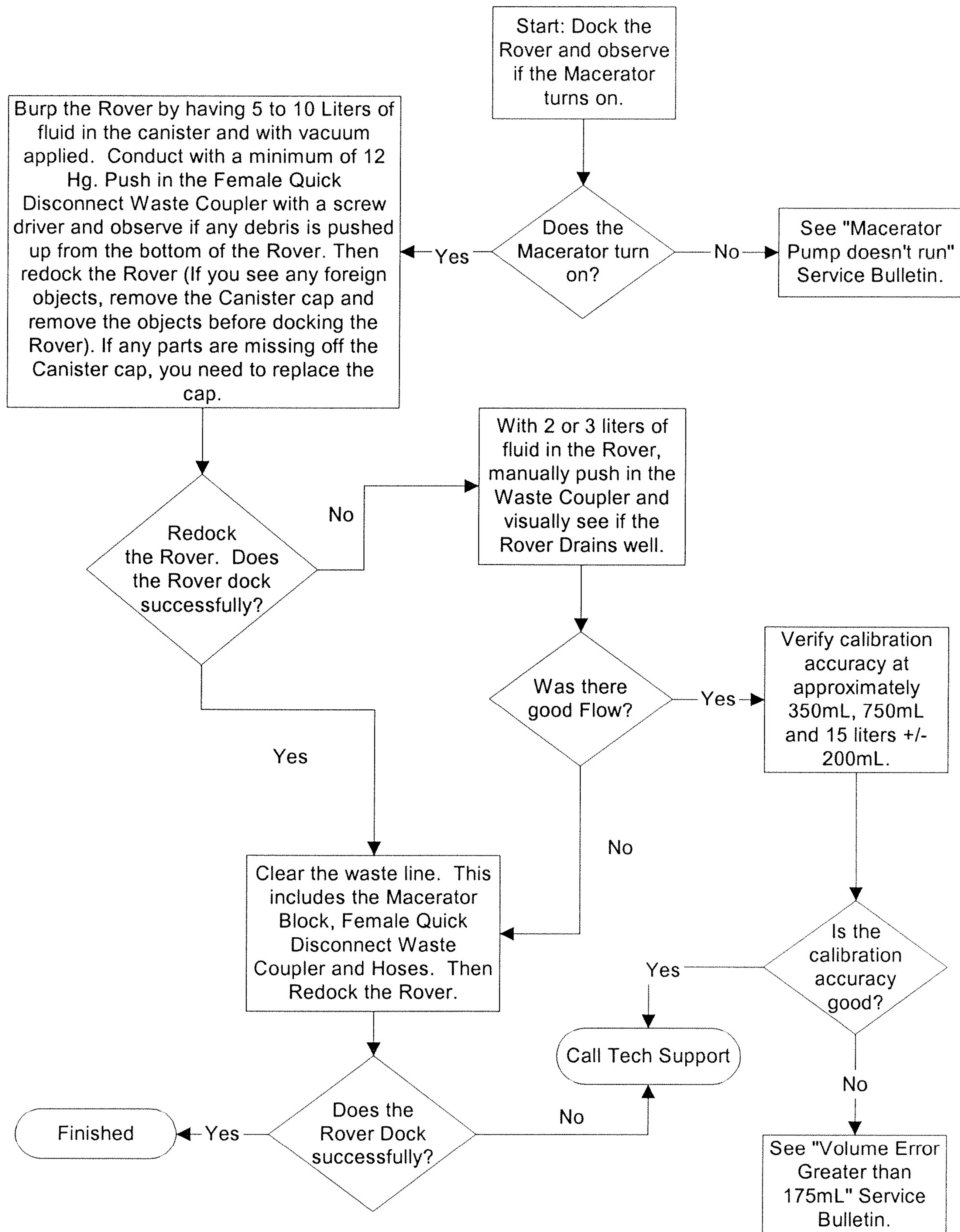
Offload Error

Pressure Transducer Rover

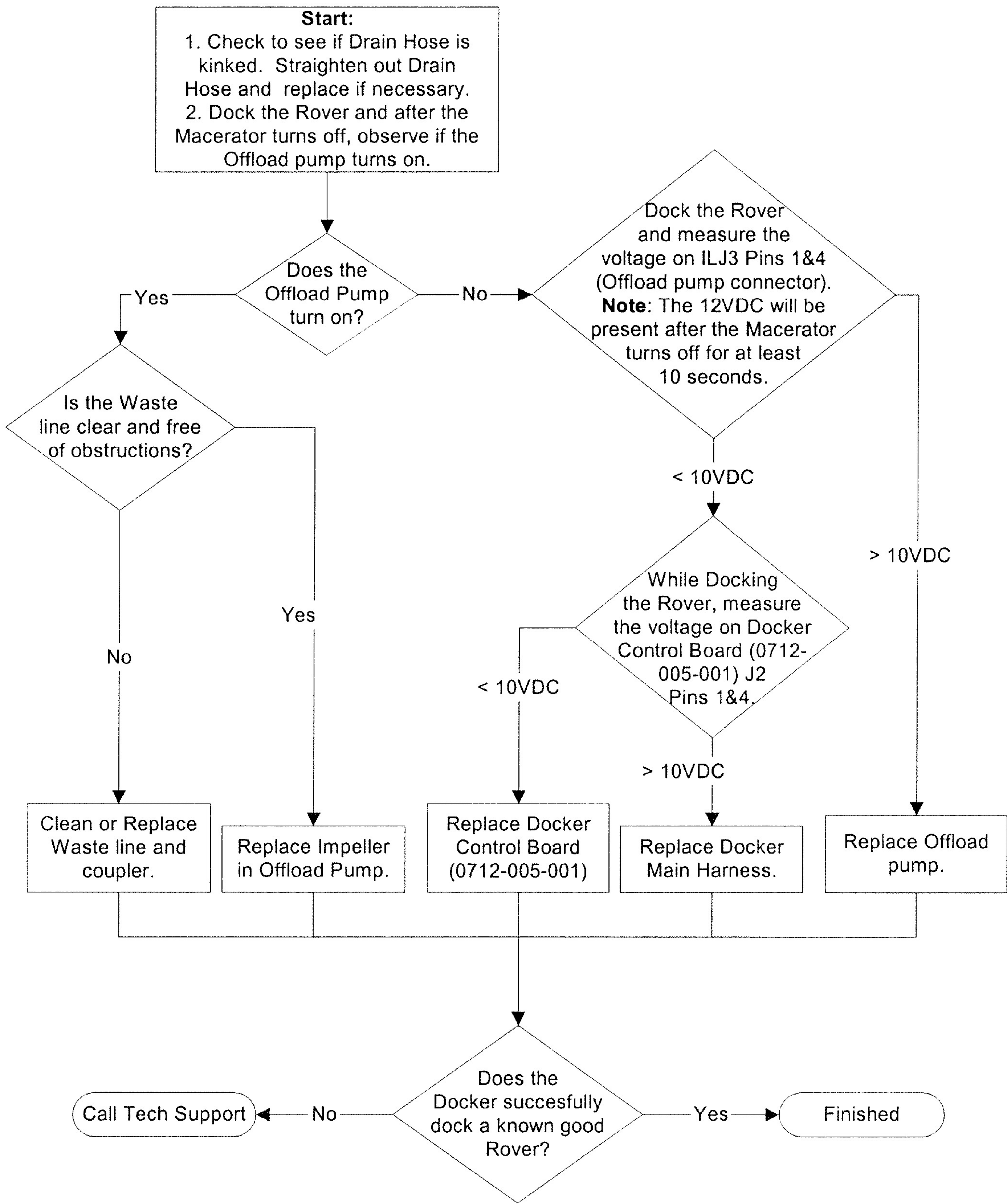


Offload Error

Level Sensor Rover

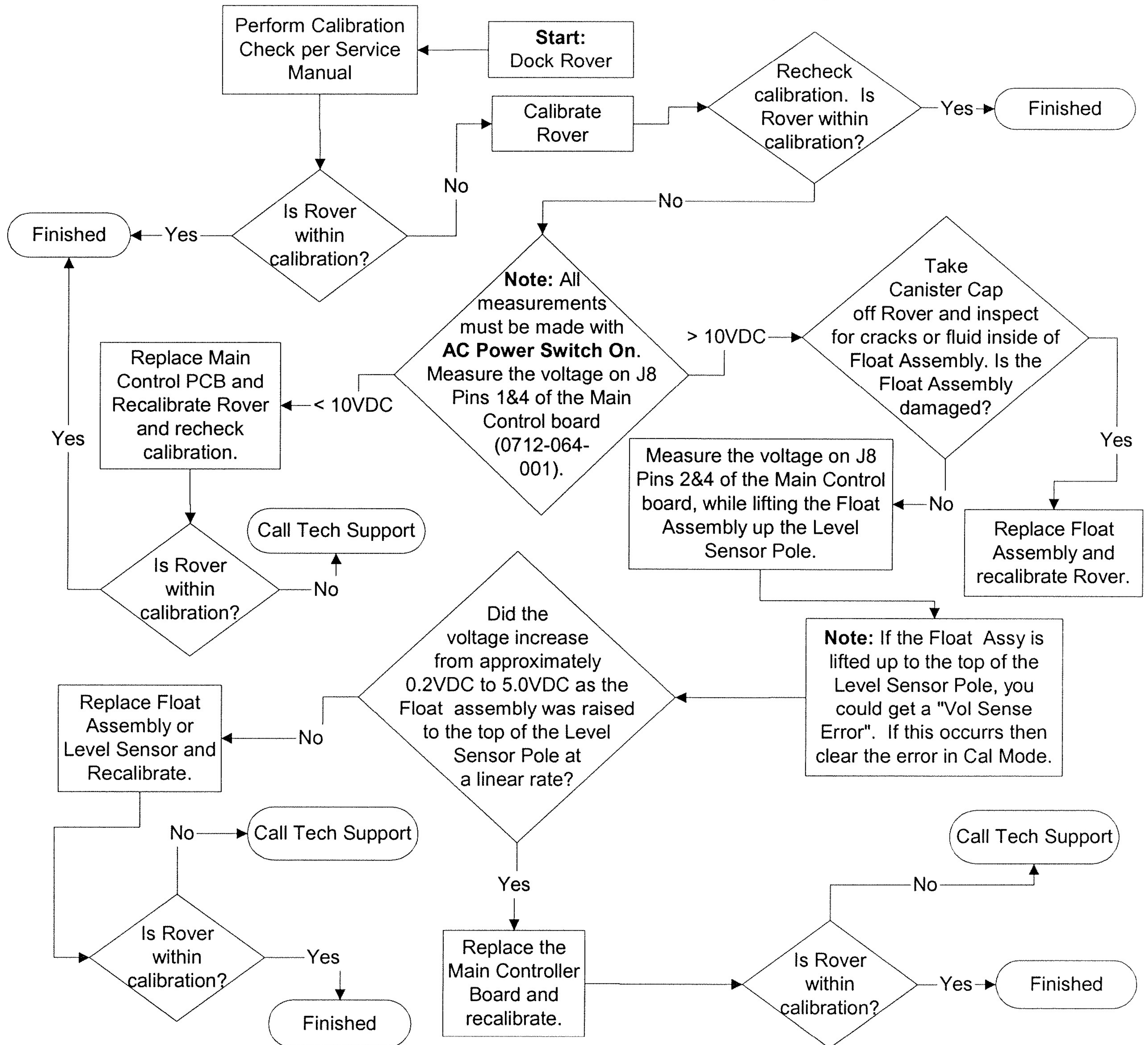


Offload Error Docker



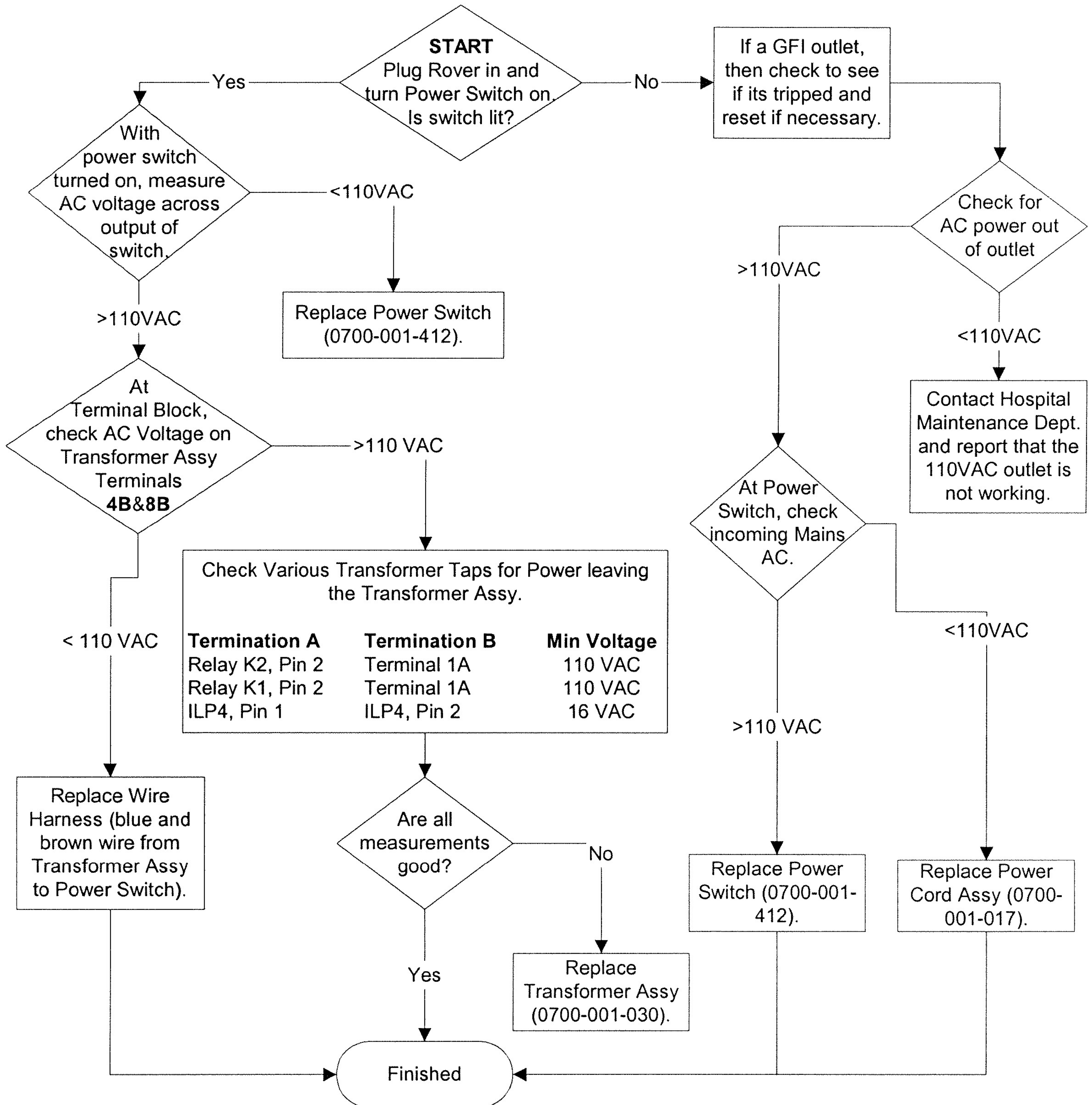
Volume Error > 175ml

Rover Model 700-1, 700-3 (Level Sensor) only

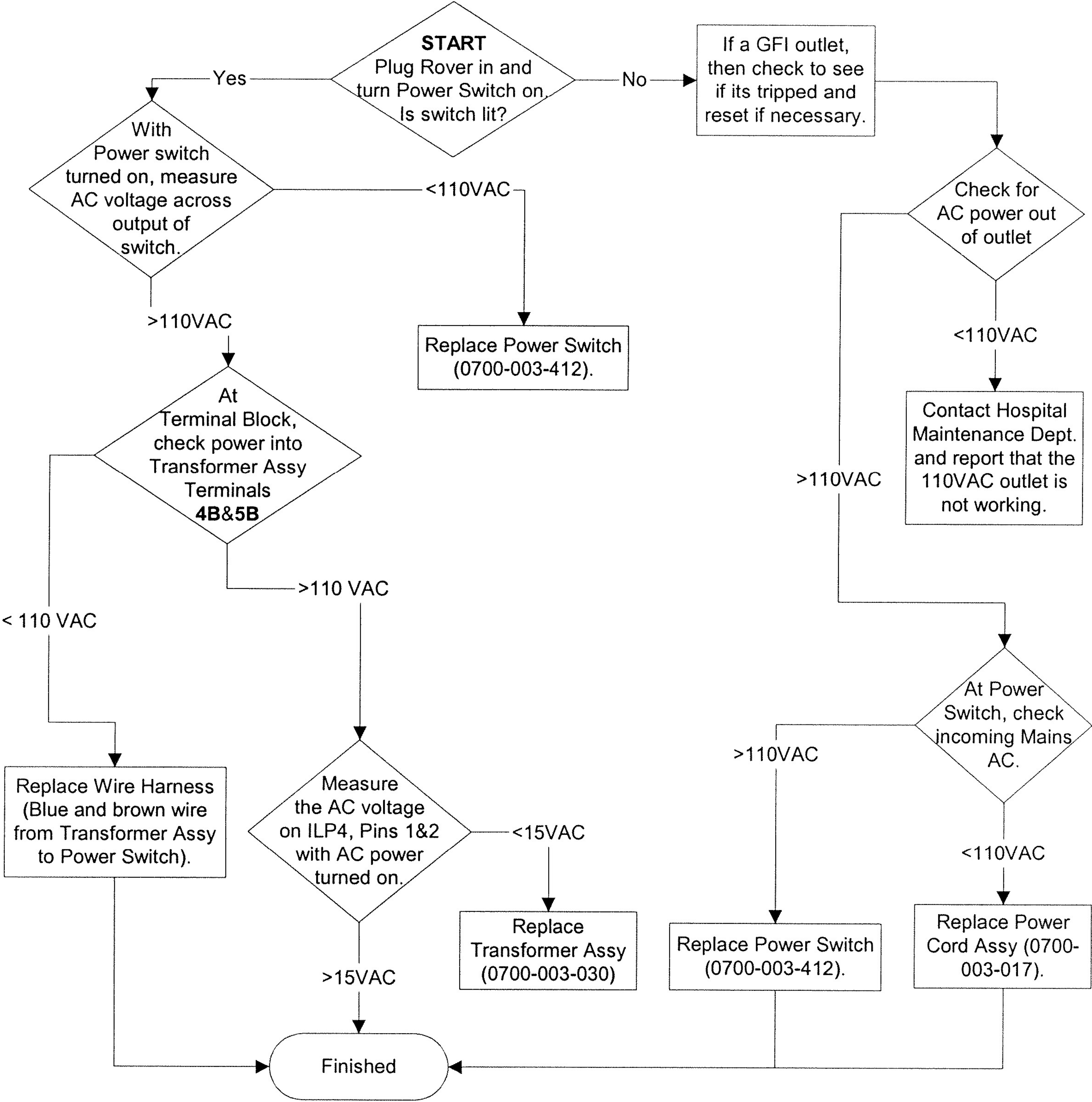


0700-001-000

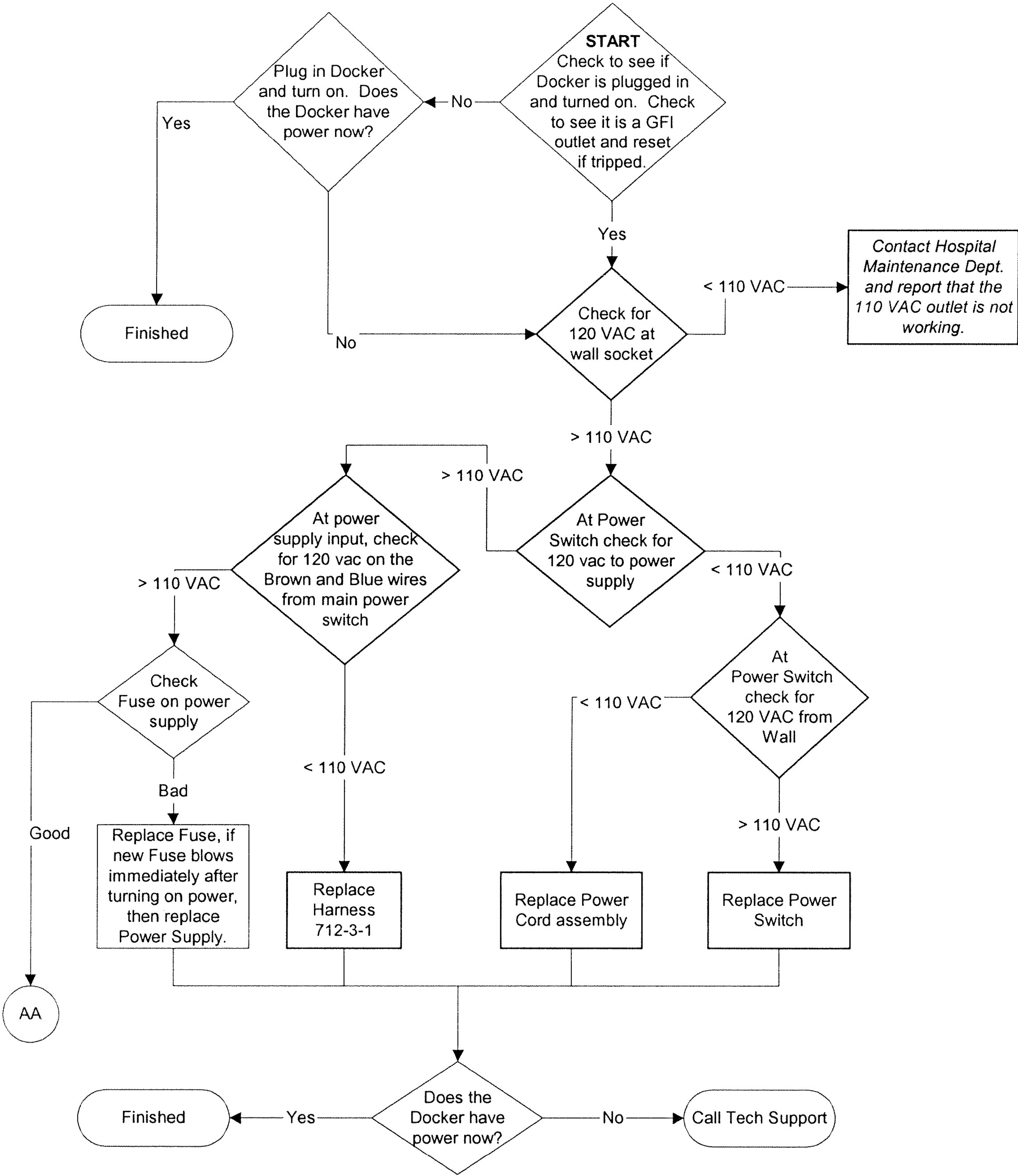
Rover Has No AC Power



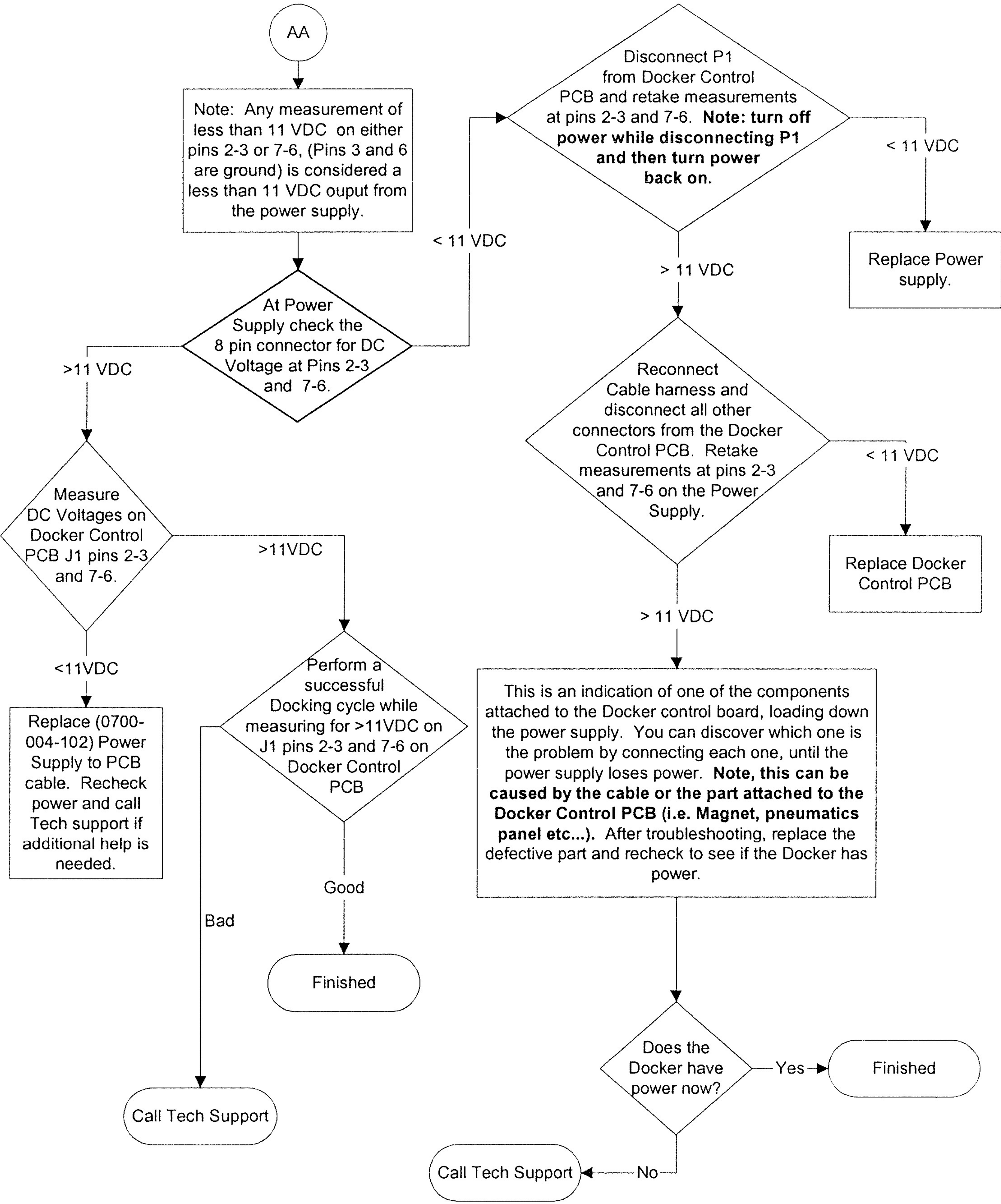
0700-003-000
Rover Has No AC Power



No Power to Docker

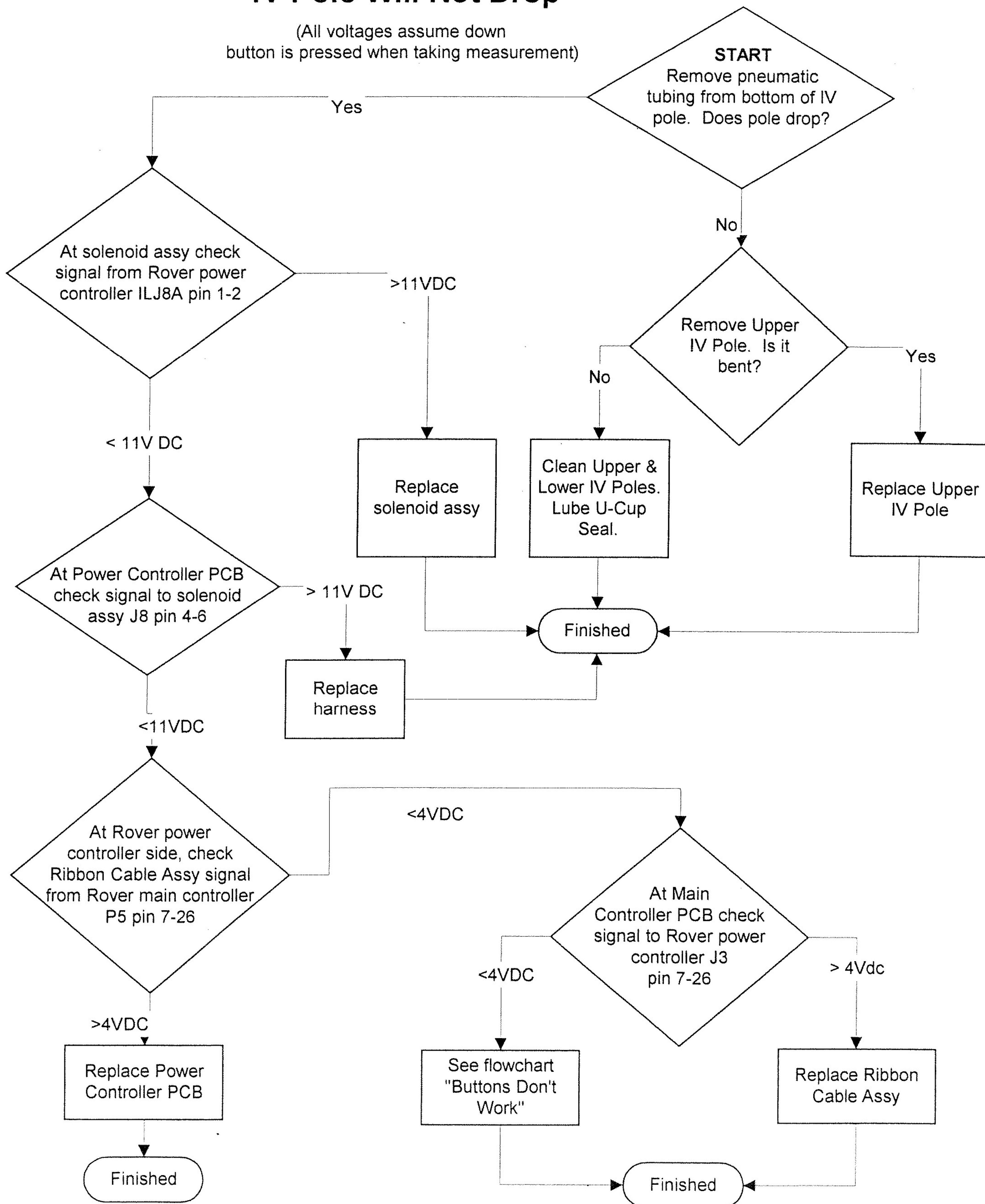


No Power to Docker



IV Pole Will Not Drop

(All voltages assume down
button is pressed when taking measurement)



Stryker Instruments Service Bulletin

Service Bulletin Number SB-0115

Rev Level B

Routine Service Bulletin X

Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Approval	Name	Signature	Date
Originator	Steve Horvath	S/S. Horvath	09/16/02
Quality	Steve Horvath	S/S. Horvath	09/16/02
Manufacturing	Kerry Lake	S/K. Lake	09/16/02
Senior Engineer	Ryder Russell	S/R. Russell	09/16/02
Materials	Tori Skinner	S/T. Skinner	09/16/02

Title: Neptune Docker w/ Detergent Upgrade Instructions

Purpose: Procedure outlining the steps necessary to perform a field upgrade of a Neptune Docker (700-4) into a Neptune Docker with Detergent (700-5). This procedure also outlines the steps required to update the Neptune Rover (700-1 or 700-3) for compatibility with a Neptune Docker with Detergent.

Scope: Neptune Docker (p/n 0700-004-000)

Neptune Rover (p/n 0700-001-000)

Neptune Rover (without smoke mode or power pole; p/n 0700-003-000)

Distribution List: Field Service Technicians

Documents requiring revision: Neptune Service Manual (p/n 0700-001-712)

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Safety Service Bulletin __

Details:

Neptune Docker w/ Detergent Upgrade Instructions

The following items are required to complete this upgrade for level-sensor Rovers and any revision Docker:

- One (1) Upgrade Kit (p/n 0711-122-002)
- Rover Software Upgrade Chip (p/n 0712-064-002), Rev 5.0 – one (1) required for every Rover at account
- New Rover Canister Cap Assembly (p/n 0711-027-002) – one (1) required for every Rover at account

The following items are required to complete this upgrade for pressure-transducer Rovers and any revision Docker:

- One (1) Upgrade Kit (p/n 0711-122-002)
- New Rover Canister Cap Assembly (p/n 0711-027-001) – one (1) required for every Rover at account
- New Main Controller PC Board (p/n 0712-064-001) – one (1) required for every Rover at account
- New Transducer Adapter PC Board (p/n 0712-016-001) – one (1) required for every Rover at account
- Cooling Fan Ground Harness (0712-018-001) – one (1) required for every Rover at account

Required Tools & Supplies:

- Drill and 7/16" bit
- Chip Puller
- Loctite 242

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Upgrade Instructions

1. Prepare 5 liters of Elimstaph solution per label instructions. Pour solution into a Rover and dock the Rover. Let the Docker sit for 10 minutes before beginning work on the unit.
2. Turn off and unplug the Docker.
3. Remove fresh water input hose.
4. Remove top panel of Docker.
5. Cut cable tie holding the Sprinkler Valve wires to inlet hose.
6. Cut off hose at inlet of Sprinkler Valve and at other end (at backflow prevention valve).
7. Disconnect wire-reinforced hose from inlet to offload pump.
8. Unplug Sprinkler Valve wires.
9. Cut tubing from pneumatic elbows (**note which tube is attached to which elbow**). Extra fittings are included in case the existing ones are damaged.
10. Unscrew shoulder screws from the Actuator (save the plastic bearings). Extra Shoulder screws are included. Replace if screws are bent.
11. Remove Actuator Assembly from the Docker for further disassembly.
12. Place the New actuator assembly from upgrade kit back into the actuator channel and fasten with shoulder screws (with Loctite 242), plastic bearings and springs. The shoulder screws should be fastened into the bottom set of holes in the actuator.
 - a. **Note: Do not attach sprinkler hose to brass hose fitting at this time. Actuator assembly is easier to install without hose attached.**
 - b. **Note: Inspect shoulder screws and bearings and replaced as needed.**
13. Remove the Power Supply Shroud (4 screws) from Power Supply panel.

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NOTE: ESD Protection is required while working on any PC board of the Docker or Rover.

14. Check the software revision on the chip in the power supply board. If the chip on the board is lower than Revision 4.0, replace the chip with the new one from the kit. (Always use a chip-puller to remove a chip and ensure new chip is fully installed into the chip socket).
15. Move DIP switch #1 on the Power Supply Board to the closed position (all switches, in their original configuration, should be open).
16. Unplug connector P2 from J2.
17. Slide the pin of the Cleaner Adapter Wire harness into slot #7 (empty) of the connector. Pin will only insert one way.
18. Carefully remove pin #5 (red wire) from the connector. Do not damage the pin during disassembly. Untwist a few inches of wire from the main bundle. You may have to remove the wire bundle label. Be sure to replace it.
19. Splice the wire from pin 5 and the blue wire together using the Insulation Displacement Connector: Place the red wire from pin 5 into the through hole of the Insulation Displacement connector. Place the blue wire from the Cleaner Adapter Wire harness into the longer blind hole in the Displacement connector. Close the two halves of the Displacement connector until it clicks (pliers may be required to fully close the connector).
20. Fasten a cable tie around the Displacement connector to ensure it cannot open.

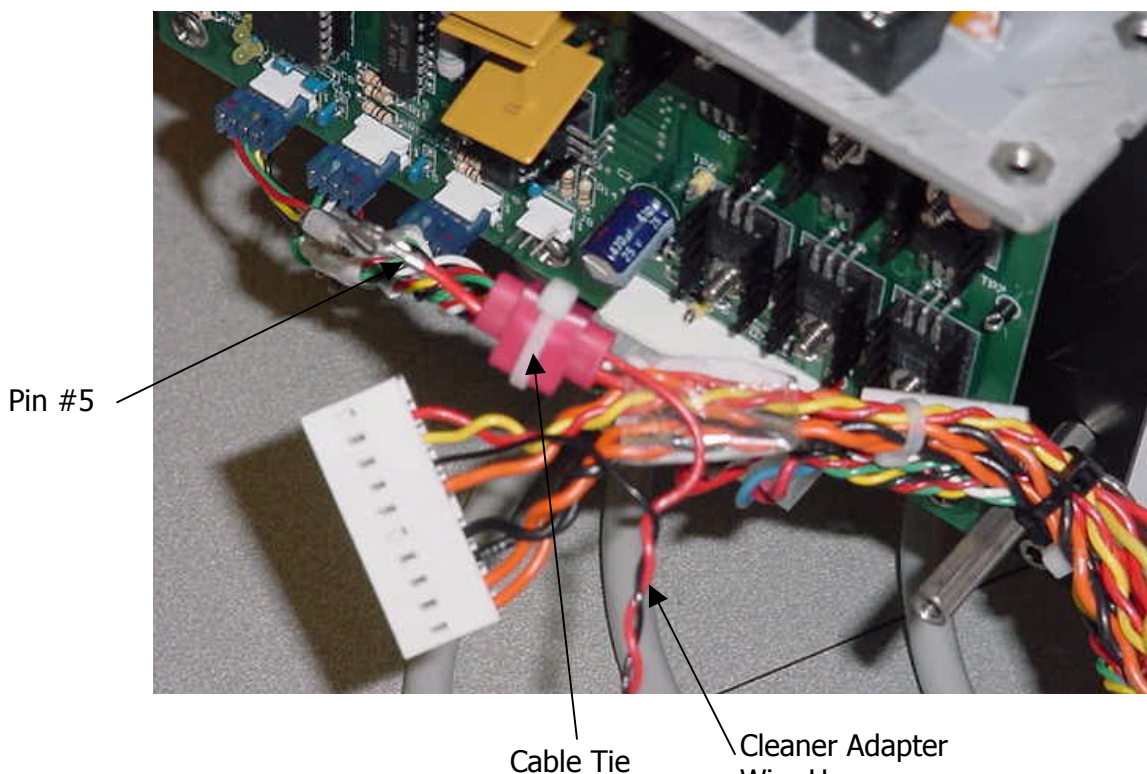
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Safety Service Bulletin__



21. Replace the pin into slot #5 on the connector (small tab should click into place).
22. Re-attach the connector to the board (J2).
23. Using cable ties, fasten the Cleaner Adapter wires along the main wire harness on the back panel, up to where the Sprinkler Valve wires branch off.
24. Attach the new hose, supplied in the kit, from the check valve to the Sprinkler Valve. Fasten hose clamps.
25. Re-attach wire reinforced hose to offload pump. Fasten hose clamps.
26. Plug in Sprinkler Valve and injector pump connectors and cable tie them to the Sprinkler hose. Manually move actuator to ensure there is enough slack in the wiring harnesses.
27. Re-attach the pneumatic tubing to the pneumatic elbows on the actuator assembly.

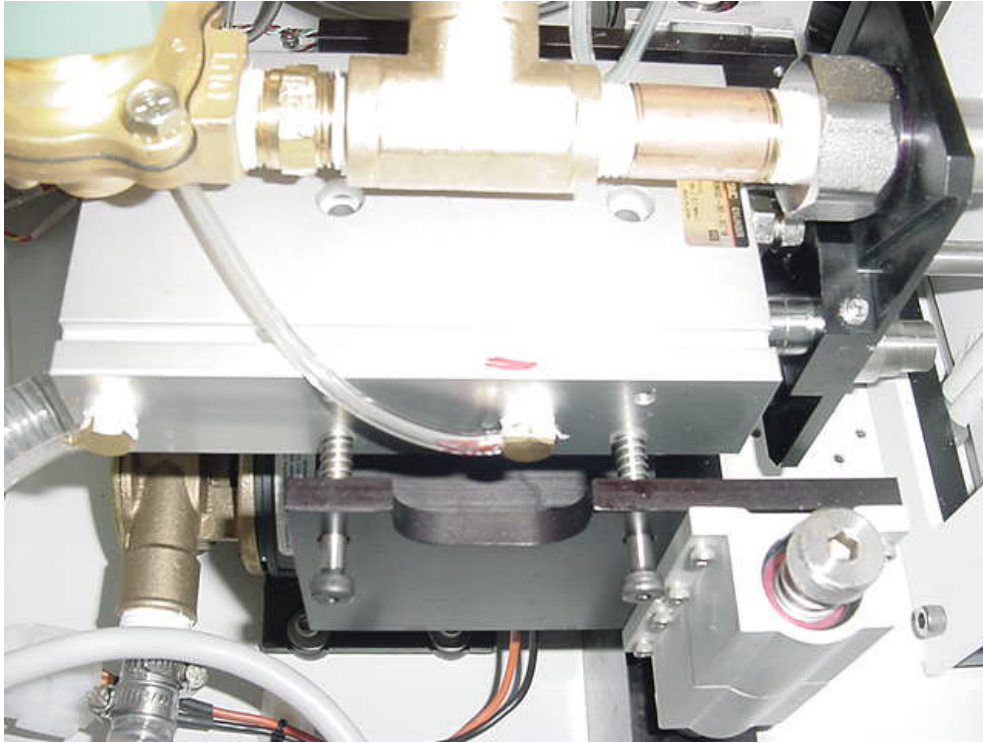
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28. Replace Power Supply Shroud and fasten with 4 screws and Loctite 242.
29. Drill hole (7/16") into the Right Door (Pneumatic Side) Assy (7.5" up from bottom, 6" over from side with cutout).
30. Unthread nut of Bulkhead Connector supplied in kit and place fitting through drilled hole from the outside of door (nut should be on inside of Docker). Apply Loctite 242 to the threads and fasten nut in place.

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31. On pneumatics panel, cut the pneumatic tubing about 1" below the pressure switch. Insert the Barbed tee fitting from kit into the two ends of the cut tubing.
32. Attach the pneumatic tubing from the pump assembly to the tee fitting.

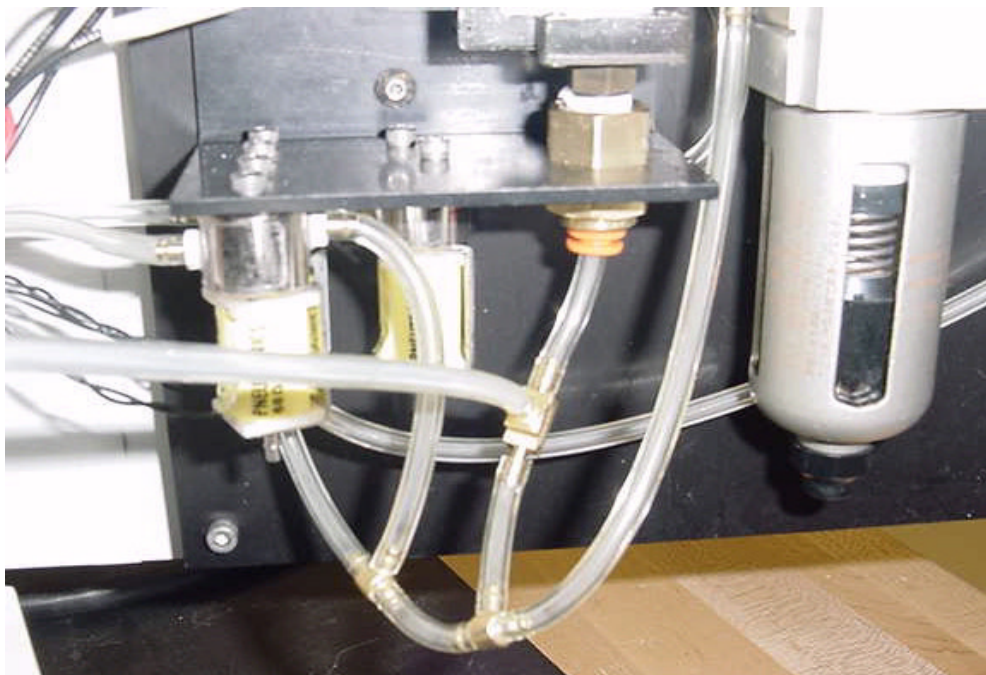
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Rev Level__B__

Routine Service Bulletin __X__

Safety Service Bulletin__



33. Re-attach the nylon tubing (20") from the green tubing fitting on the pump to the bulkhead fitting on the door. Close door.
 34. Attach the nylon tubing (48") to the green bulkhead fitting on the outside of the door.
 35. Clean a 2" X 2" space above the bulkhead fitting on the outside of the door and apply the Detergent Inlet label.
 36. Put the top panel back on the Docker.
 37. Inspect per section 6 of the Service Manual.
-

Stryker Instruments Service Bulletin

Service Bulletin Number __SB-0115__

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Canister Cap Upgrade

1. Remove all hoses from the top of the Cap on the Rover – retain all hose clamps.
2. Remove the screws and washers from the Cap on the Rover – retain all hardware. Remove the old cap and the metal support washer around the cap (if present) and discard.
3. Place the new Cap (*11-027-002 for Level-Sensor Rovers and 11-027-001 for Pressure-Transducer Rovers*) on the Rover and fasten with screws and washers.
 - a. **NOTE: Do not over-tighten the screws, as damage to the container or cap may result.**
 - b. **Add screws in "STAR" pattern. Cap may have to be stretched slightly to align screws holes to canister ring.**
4. Refasten all hoses (except the Sprinkler supply hose).
5. Cut the Quick Disconnect fitting from the end of the sprinkler supply hose and discard.
6. Place one hose clamps over the hose.
7. Attach the hose to the barbed fitting in the center of the cap. Tighten the hose clamps over the hose and fitting.

ROVER Software Upgrade Instructions (Revision 4.0 or 4.1)

These instructions provide the information required to replace the software in a Rover (700-1 and 700-3). The software chip is a Stryker part (p/n 0712-064-002) that typically comes to Bio-Medical assembled onto the 32-060-069 Tested PCBA, Main Controller - Rover. There is no Bio-Medical part number for the software chip itself.

1. Assembler must be properly grounded during this procedure.
2. If assembled in a Rover: Make sure battery disconnect switch is off. Remove user interface panel from Rover. (You do not need to disconnect the ribbon cable and wire harnesses attaching panel to Rover.)
3. Use chip puller to remove the software chip (U4) from the board. It is the square chip labeled 0712-064-002 Rev 4.0 or 4.1 (for lower revisions, see * below).

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4. Assemble new chip (Stryker part number 0712-064-002 Rev 5.0) onto the board. **The angled corner of the chip should be aligned with the angled corner in the socket.** Make sure the chip is fully inserted into the socket.
5. Reassemble user interface panel to Rover.
6. Complete a docking cycle with water. Inspect the Docker for leaks.
7. Inspect per section 6 of the Service Manual.

*** ROVER Software Upgrade Instructions (Revision < 4.0) Or Pressure Sensor**

To upgrade an earlier revision (pressure-transducer) Rover, the old Main Controller Board must be replaced with a new Main Controller Board (0712-064-001) and a new board (0712-016-001) must be added with a grounding harness (0712-018-001)

1. Assembler must be properly grounded during this procedure.
2. Make sure battery disconnect switch is off and Rover is unplugged. Remove user interface panel from Rover. Disconnect the ribbon cable and wire harnesses that attach the panel to the Rover, and then disconnect all cables and wire harnesses from the Main Controller Board. Remove the board from the panel. By removing the 4 fastening screws, Retain all screws.

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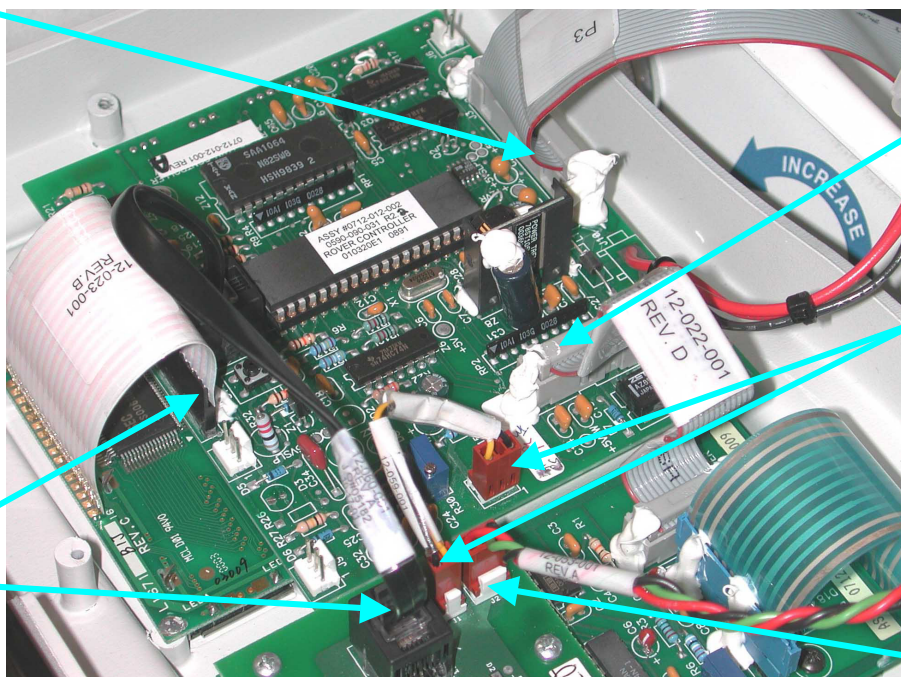
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Rev Level__B_____

Routine Service Bulletin _X_

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12-022-001
Unplug from Main
Controller Board



12-022-001
Unplug from Main
Controller Board

12-059-001
Remove & Discard

12-023-001
Unplug from Main
Controller Board

12-060-001
Remove & Discard

12-053-001
Remove & Discard

3. Install the new Main Controller Board into the panel. Fasten the board with the screws from the previous step. **Record the serial number and revision level of the new board on the service call report.** Connect P3 into J1, the LCD plug into J2, and P4 into J6 on the Main Controller Board. Remove connector 12-060-001 and 12-059-001 from the ADC board and discard. Plug P10 into J5 on the Main Controller Board.
4. Remove Tower Right Panel from Rover.
5. Unplug the pressure transducer wiring from the small Fan Adapter Board. Plug the transducer wiring into the J2 connector on the new Transducer Adapter Board (0712-016-001). The cooling fan should still be plugged into the Fan Adapter Board. Run the wiring from the Transducer Adapter Board up to the User Interface Panel and plug the P4 connector into the Main Controller Board at J4. Remove the harness from J12, and in its place plug in P12 from the Cooling Fan Ground Harness (0712-018-001). Plug the P2 end of this harness into J2 on the Power Controller Board.
6. Place a cable tie through the hole in the Transducer Adapter Board, and fasten the board to the same wire harness as the Fan Adapter Board.

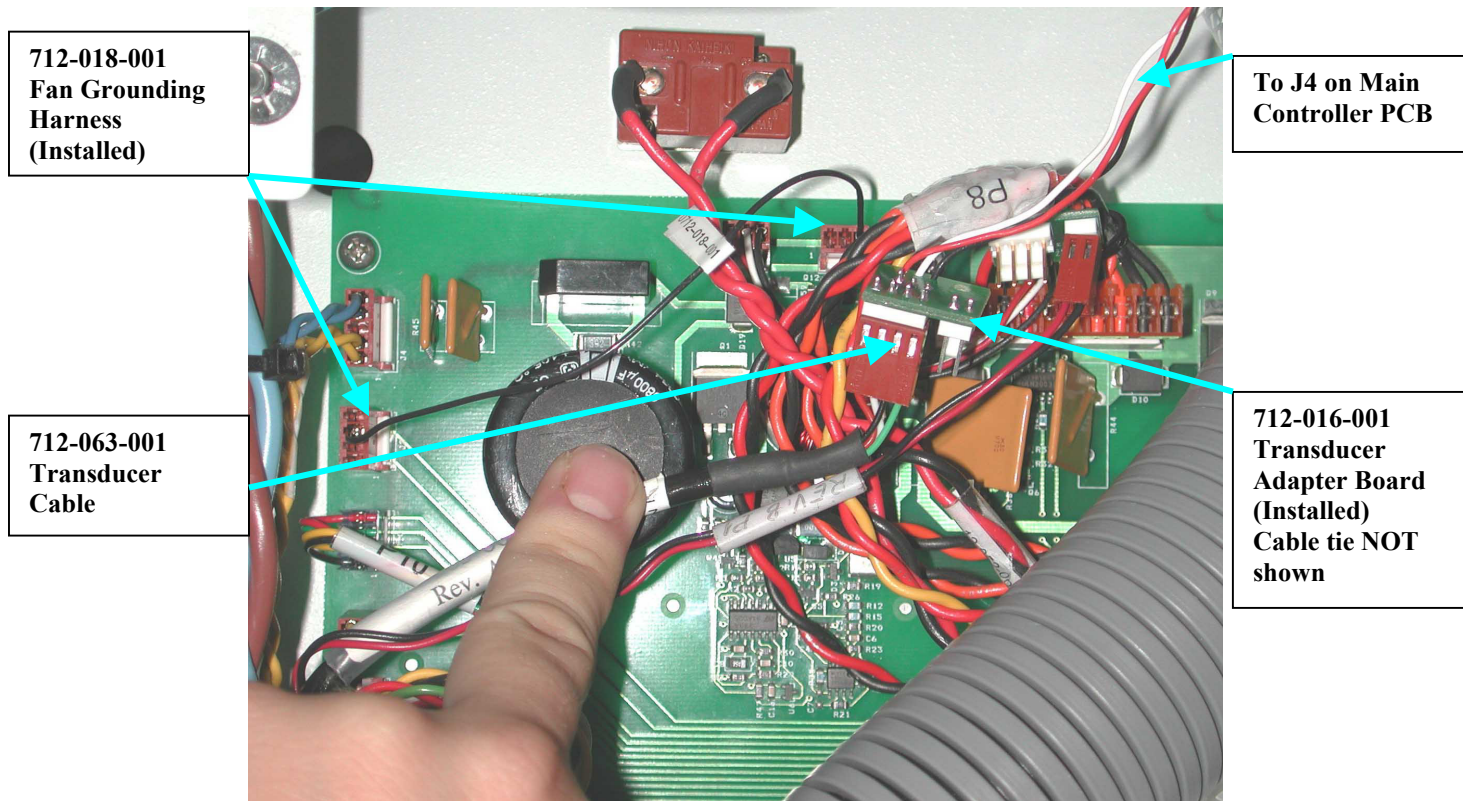
Stryker Instruments Service Bulletin

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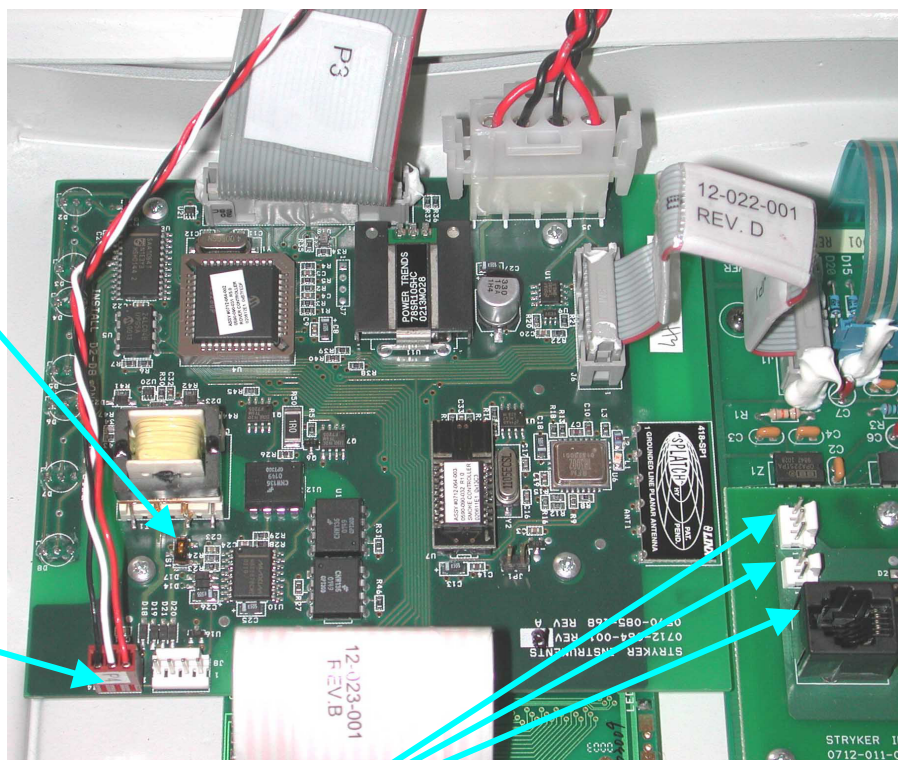
Safety Service Bulletin__



7. Examine switch S1 on the Main Controller Board (near the small yellow transformer) and switch if necessary. For pressure sensor Rovers, the switch must be switched toward the small yellow transformer.

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0712-016-001
Transducer Adapter Board
(Installed)



**NOTE: 12-060-001, 12-059-001 and 12-053-001
Have been Removed & Discarded**

8. Re-attach the Tower Side Panel.
9. Place the User Interface Panel onto the Rover (do not re-fasten yet).
10. Re-calibrate the Rover in accordance with Stryker Calibration procedures.
11. Complete a docking cycle with water. Inspect the Docker for leaks.
12. Ensure the transducer cooling fan is running by checking for air flow at the slot in the bottom of the canister.

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13. Inspect per section 6 of the Service Manual.

14. Once completed, remove the User Interface Panel and re-apply RTV 162 to all connector & board locations to which it was previously applied.

NOTE: UNCURED RTV IS CONDUCTIVE. DO NOT ALLOW RTV TO TOUCH BOARD!

15. Re-attach the User Interface Panel.

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Service Bulletin Number SB-0120 Rev Level NONE

Routine Service Bulletin X Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Approval	Name	Signature	Date
Originator	Steve Horvath	<i>Steve Horvath</i>	10/17/02
Quality	Steve Horvath	<i>Steve Horvath</i>	10/17/02
Manufacturing	Kerry Lake	<i>Kerry Lake</i>	10/17/02
Senior Engineer	Tom O'Keefe	<i>Tom O'Keefe</i>	10/17/02
Materials	Tori Skinner	<i>Tori Skinner</i>	10-18-02

Title: Docker Pneumatics Wiring

Purpose: Outline how the Docker Pneumatics panel is electrically wired into the Docker.

Scope: Neptune Docking Station (0700-004-000 or 0700-005-000)
Pneumatics Panel (0711-019-001 or 0700-004-050)

Distribution List: **Stryker Instruments Field Service Technicians**

Documents requiring revision: NONE

Details:

The following steps are instructions on how to electrically wire a 2nd generation pneumatics panel up to the Docker.

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Routine Service Bulletin X

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Required Parts

QTY	Part Number	Description
1	0700-004-050 (711-19-1)	Pneumatics Panel
1	0700-004-116 (12-55-1)	Pneumatics Wire Harness

Wiring Instructions

1. Slide the COMMON, blue, connector of the wire harness onto the TOP terminal on the pressure switch.
2. Slide the N.C., red, connector of the wire harness onto the BOTTOM terminal on the pressure switch.
3. Locate connectors ILJ1A, ILJ1B, & ILJ7A in the Docker.
4. Plug connector ILP7A from wire harness into ILJ7A from Docker.
5. Connect ILJ1A to the black solenoid on the pneumatics panel.
6. Locate connectors ILJ7C and ILJ7B on the pneumatics panel.
7. Plug connector ILJ7B from the compressor to connector ILP7B of the wire harness.
8. Plug connector ILJ7C from the yellow wrapped solenoid to connector ILP7C of the wire harness.
9. Fold connector ILJ1B back and cable tie to wire harness. Gather remaining slack wire from harness and secure them to the pneumatic tubing from the solenoid. Ensure right door can still be easily opened.

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Service Bulletin Number SB-0121

Rev Level NONE

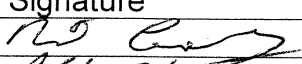
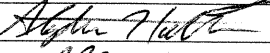

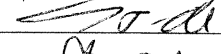
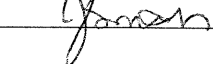
Routine Service Bulletin X

Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Approval	Name	Signature	Date
Originator	Rob Cooley		1/28/03
Quality	STEPHEN HORVATH		1/28/03
Manufacturing	Al Beverage		1/28/03
Senior Engineer	T. O'Keefe		1/28/03
Materials	J. Smith		1/29/03

Title: IV Pole Won't Stay Extended

Purpose: Neptune System Troubleshooting

Scope: 700-1 Rovers (Pressure Transducer and Level Sensor)

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Stryker Instruments Service Bulletin

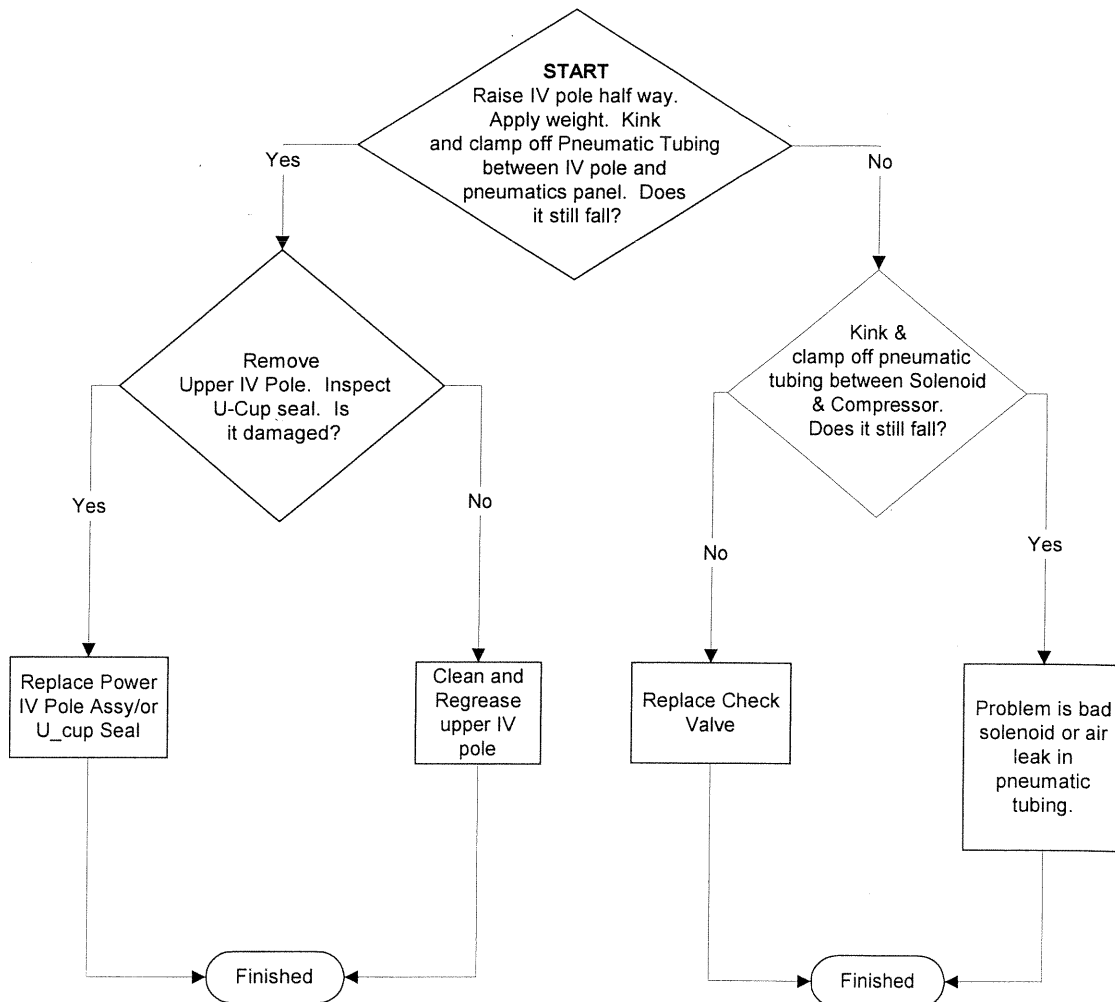
Service Bulletin Number SB-0121

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

IV Pole Won't Stay Extended



Stryker Instruments Service Bulletin

Service Bulletin Number SIB-0122

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Approval	Name	Signature	Date
Originator	ROB COOLEY	<i>[Signature]</i>	3/17/03
Quality	AL BEVERAGE	<i>[Signature]</i>	3/17/03
Manufacturing	STEVE HOLVATH	<i>[Signature]</i>	3/17/03
Senior Engineer	T. O'Keefe	<i>[Signature]</i>	3/18/03
Materials	J. Smith	<i>[Signature]</i>	3/18/03

Title: Docker / Rover Doesn't Rinse

Purpose: Neptune System Troubleshooting

Scope: All Neptune Rovers and Docks

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Notes:

1. If the Docker is leaking fresh water. Check the Backflow Prevention Valve (0700-004-016). It is possible for the Backflow Prevention Valve to crack if the Docker is exposed to freezing temperatures. (If the Valve still has water in it).
2. If you have a Rover with 5.0 software and a Docker with 4.0 software, you can check for proper operation of the Rinse Valve by entering the Diagnostic mode on the Rover.
 - A. To enter Diagnostic mode, turn the green power switch on the Rover, off and back on while simultaneously pressing the Smoke mode button and down arrow.

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- B. Once in the Diagnostic mode, scroll down the menu until you reach the Dock Control on the LCD display. With this mode selected, you can dock the Rover and manually control the docking sequence.
- C. Turn off the fresh water supply to the Docker and scroll down the menu until you reach the Sprinkler On/Off display. Turn on the Sprinkler and using a multimeter, measure the DC voltages at the following test points listed in the Flowchart.

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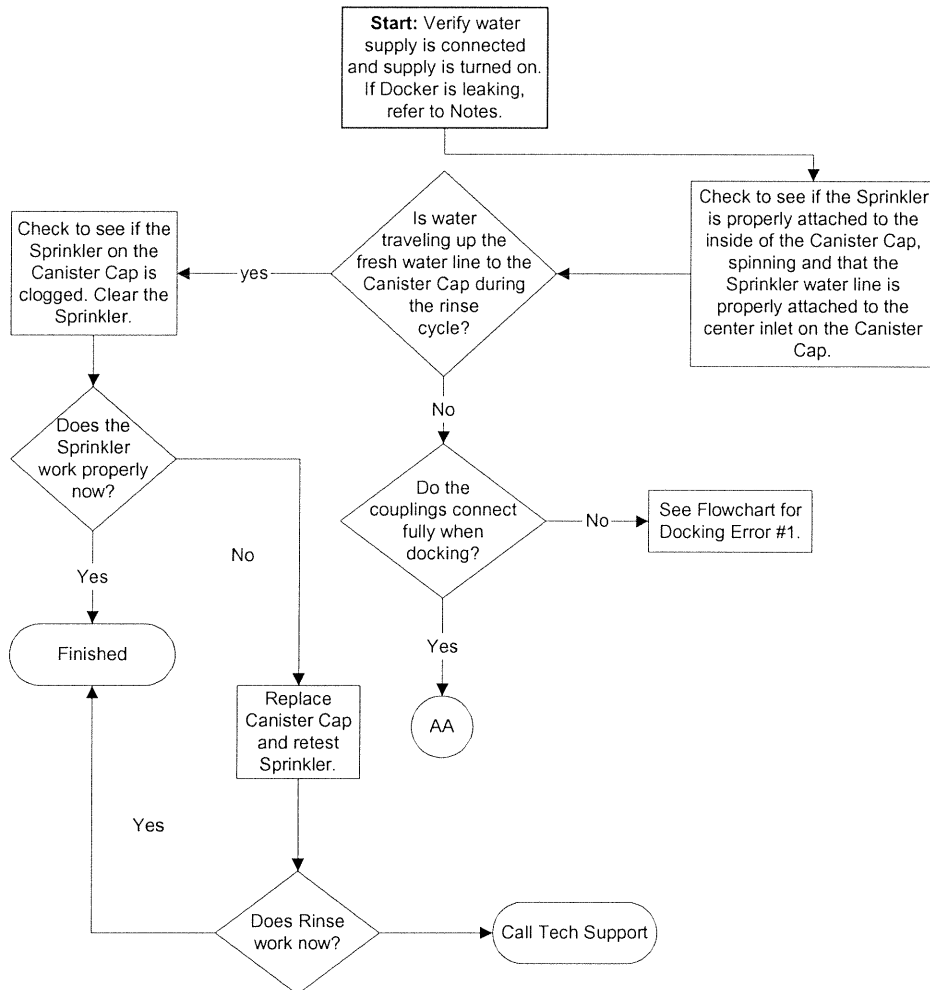
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Routine Service Bulletin X

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Docker/Rover Doesn't Rinse



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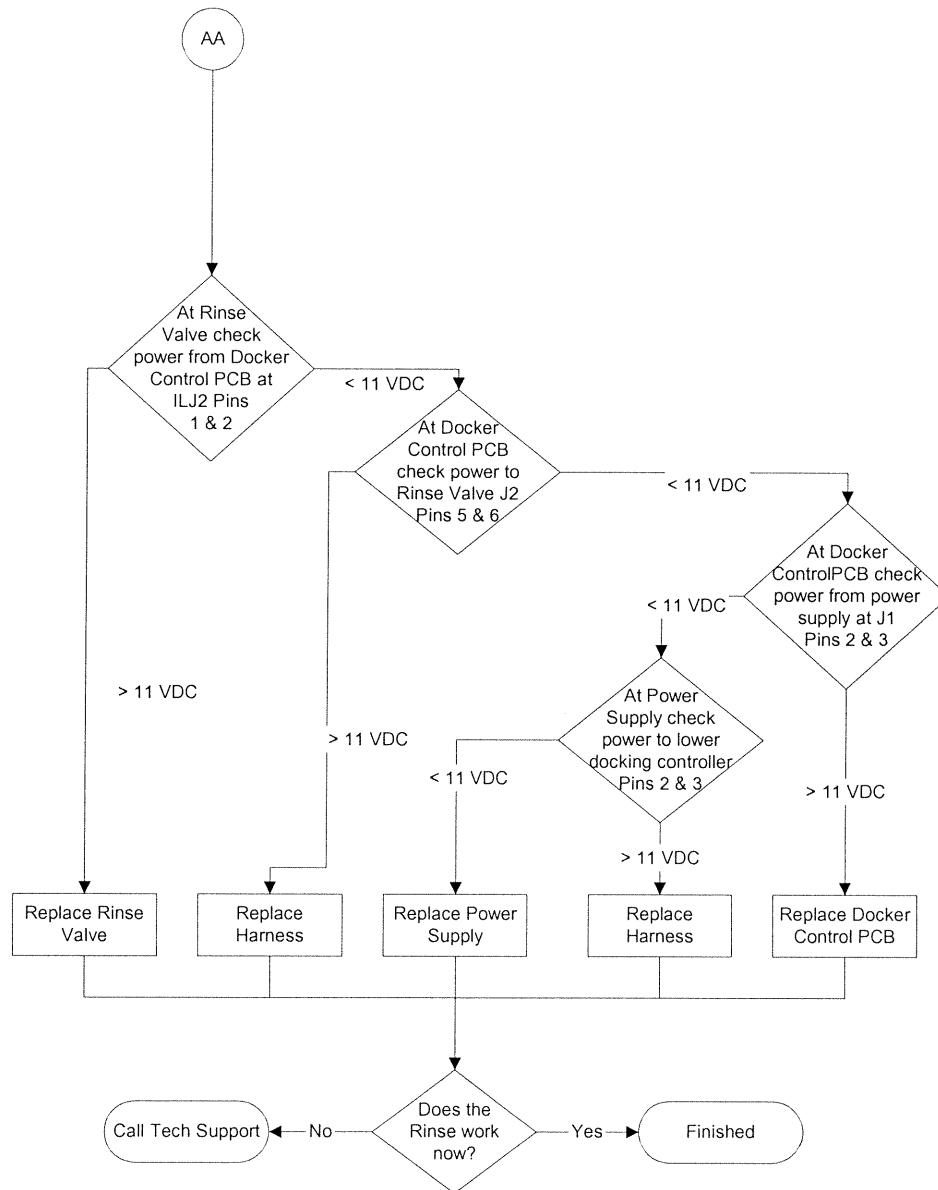
Service Bulletin Number SB-0122

Rev Level NONE

Routine Service Bulletin X

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Docker/Rover Doesn't Rinse



Stryker Instruments Service Bulletin

Service Bulletin Number SB - 0123Rev Level NONERoutine Service Bulletin XSafety Service Bulletin

Applicability:

Stryker Subsidiary Stryker Field Service X

Approval	Name <u>Shirley Reed</u>	Signature <u>[Signature]</u>	Date <u>4-20-03</u>
Originator	<u>ROB COOLEY</u>	<u>[Signature]</u>	<u>3-24-03</u>
Quality	<u>A. BEVERAGE</u>	<u>[Signature]</u>	<u>3-24-03</u>
Manufacturing	<u>R. Theln</u>	<u>[Signature]</u>	<u>3/27/03</u>
Senior Engineer	<u>T. O'Keefe</u>	<u>[Signature]</u>	<u>3/26/03</u>
Materials	<u>TORI SKINNER</u>	<u>[Signature]</u>	<u>3-24-03</u>

Title: Rover and Docker Inspection Procedures**Purpose:** Inspection procedures to assist with the maintenance and servicing of the Neptune product.**Scope:** 700-1 (Pressure Sensor), 700-1 (Level Sensor), 700-3, 700-4, and 700-5.**Distribution List:** All NEPTUNE service providers**Documents requiring revision:** N/A**Details:** Refer to Table 1 for specific tests to perform when replacing parts.

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INSPECTION REQUIRED	PART # OF REPLACED REPAIRED PART	DESCRIPTION OF REPLACED REPAIRED PART	PART # OF SYSTEM
Test 1: Hipot Test	Rover	Pressure Transducer	0700-001-000
	0700-001-030	Transformer Assy	
	0700-001-017	Power Cord	
	0700-001-124	Transformer to Circuit Breaker Cable	
	0700-001-123	Protective Earth Ground Cable	
Test 2: Earth Resistance	Rover	Pressure Transducer	0700-001-000
	0700-001-030	Transformer Assy	
	0700-001-017	Power Cord	
	0700-001-124	Transformer to Circuit Breaker Cable	
	0700-001-123	Protective Earth Ground Cable	
Test 3: Other Electrical Inspections	Rover	Pressure Transducer	0700-001-000
	0700-001-070	Pneumatic Panel Assy	
	0711-123-001	Macerator Pump	
	0700-001-240	Vacuum Pump	
	0712-013-001	Blower Controller Board	
	0712-064-001	Main Controller Board	
	0712-019-001	Power control Board	
	0712-020-001	IR Transceiver Board	
	0700-001-017	Power Cord	
	0700-001-124	Transformer to Circuit Breaker Cable	
	0700-001-430	Battery Assy	
	0700-001-123	Protective Earth Ground Cable	
	0700-001-013	Smoke Blower	
	0700-001-412	Power Switch	
	0712-011-001	ADC Board	
	0712-012-001	Main Controller Board	
	0712-014-001	Fan Adapter PCB	
	0712-016-001	Transducer adapter PCB	
	Any User Interface Panel		
	Any Transformer		
	Any Membrane Switch		
	Any relay		
	Any Wire Harness		
	Any Ribbon Cable		

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Test 3: Other electrical insp. continued	Rover	Pressure Transducer	0700-001-000
	Any Cooling Fan		
Test 4: Complete Rover Functional Test/Docking Cycling Verification	Rover	Pressure Transducer	0700-001-000
	0700-001-070	Pneumatic Panel Assy	
	0711-123-001	Macerator Pump	
	0700-001-240	Vacuum Pump	
	0712-013-001	Blower Controller Board	
	0712-064-001	Main Controller Board	
	0712-019-001	Power control Board	
	0712-020-001	IR Transceiver Board	
	0700-001-017	Power Cord	
	0700-001-124	Transformer to Circuit Breaker Cable	
	0700-001-430	Battery Assy	
	0700-001-123	Protective Earth Ground Cable	
	0700-001-013	Smoke Blower	
	0700-001-412	Power Switch	
	0712-011-001	ADC Board	
	0712-012-001	Main Controller Board	
	0712-014-001	Fan Adapter PCB	
	0712-016-001	Transducer adapter PCB	
	Any User Interface Panel		
	Any Transformer		
	Any Membrane Switch		
	Any relay		
	Any Wire Harness		
	Any Ribbon Cable		
	Any Cooling Fan		
Test 5: Pressure Transducer Calibration and Calibration Verification	Rover	Pressure Transducer	0700-001-000
	0711-026-001	Fluid Collection Container Assy	
	0711-123-001	Macerator Pump	
	0712-012-001	Main Controller Board (Obsolete)	
	0712-064-001	Main Controller Board	
	0712-012-002	Rover Control Software (Obsolete)	
	0712-064-002	Rover Control Software (for Part 0712-064-001)	
	0712-063-001	Transducer Assy	
	Any User Interface Panel		
Test 6: Vacuum Level Verification	Rover	Pressure Transducer	0700-001-000
	0700-027-000	HEPA filter	
	0711-026-001	Fluid Collection Container	

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Test 6: Vacuum Level Verification continued	Rover	Pressure Transducer	0700-001-000
	0711-052-001	Vacuum Regulator	
	Rover	Pressure Transducer	0700-001-000
	0700-001-240	Vacuum Pump	
	0700-001-416	Vacuum Gage	
	Any Canister Cap		
	Any Canister Support Ring		
	Vacuum Tubing/Fittings		
	Vacuum Gage Tubing		

INSPECTION REQUIRED	PART # OF REPLACED REPAIRED PART	DESCRIPTION OF REPLACED REPAIRED PART	PART # OF SYSTEM BEING REPAIRED
Test 1: Hipot Test	Rover	Level Sensor	0700-001-000
			0700-003-000
	0700-001-030	Transformer Assy	
	0700-001-017	Power Cord	
	0700-001-124	Transformer to Circuit Breaker Cable	
	0700-001-123	Protective Earth Ground Cable	
	Rover	No IV Pole and No Smoke Blower	0700-003-000
	0700-003-030	Transformer Assy	
Test 2: Earth Resistance	Rover	Level Sensor	0700-001-000
			0700-003-000
	0700-001-030	Transformer Assy	
	0700-001-017	Power Cord	
	0700-001-124	Transformer to Circuit Breaker Cable	
	0700-001-123	Protective Earth Ground Cable	
	Rover	No IV Pole and No Smoke Blower	0700-003-000
	0700-003-030	Transformer Assy	
Test 3: Other Electrical Inspections	Rover	Level Sensor	0700-001-000
			0700-003-000
	0700-001-070	Pneumatic Panel (700-001-000 models only)	
	0700-001-330	Macerator Motor Assy	
	0700-001-240	Vacuum Pump	
	0712-013-001	Blower Controller Board	
	0712-064-001	Main Controller Board	

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	Rover	Level Sensor	0700-001-000 0700-003-000
	0712-019-001	Power control Board	
	0712-020-001	IR Transceiver Board	
	0700-001-017	Power Cord	
	0700-001-124	Transformer to Circuit Breaker Cable	
	0700-001-430	Battery Assy	
	0700-001-123	Protective Earth Ground Cable	
	0700-001-013	Smoke Blower (700-001-000 models only)	
	0700-001-412	Power Switch	
	Any User Interface Panel		
	Any Transformer		
	Any Membrane Switch		
	Any relay		
	Any Wire Harness		
	Any Ribbon Cable		
	Any Cooling Fan		
	Any Solenoid		
	Any Ribbon Cable		
Test 4: Complete Rover Functional Test/Docking Cycling Verification	Rover	Level Sensor	0700-001-000 0700-003-000
	0712-001-330	Macerator Motor	
	0712-011-001	ADC Board	
	0712-012-001	Main Controller Board	
	0712-013-001	Rover Blower Controller PCBA	
	0712-019-001	Rover Power Controller PCBA	
	0712-020-001	IR Transceiver PCBA	
	0712-043-001	Battery Assy	0700-001-430
	Any User Interface Panel		
	Any Membrane Switch		
	Any Wire Harness		
	Any Transformer		
	Any Relay		
	Any Ribbon Cable		
Test 5: Level Sensor Calibration and Calibration Verification	Rover	Level Sensor	0700-001-000 0700-003-000
	0711-026-001	Fluid Collection Container Assy	
	0711-054-001	Macerator	0711-123-001
	0712-012-001	Main Controller Board	
	0712-012-002	Rover Control Software	
	0712-063-001	Transducer Assy	

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Test 5: Cont.	Rover	Level Sensor	0700-001-000 0700-003-000
	Any User Interface Panel		
Test 6: Vacuum Level Verification	Rover	Level Sensor	0700-001-000 0700-003-000
	0700-027-000	HEPA filter	
	0711-026-001	Fluid Collection Container Assy	
	0700-001-440	Needle Valve Assy	
	0711-052-001	Vacuum Regulator	
	0700-001-240	Vacuum Pump	
	0700-001-416	Vacuum Gage	
	Any Canister Cap		
	Any Canister Support Ring		
	Vacuum Tubing/Fittings		
	Vacuum Gage Tubing		

INSPECTION REQUIRED	PART # OF REPLACED REPAIRED PART	DESCRIPTION OF REPLACED REPAIRED PART	PART # OF SYSTEM BEING REPAIRED
Test 1: Hi-Pot Test	Docking Unit		0700-004-000 0700-005-000
	0700-004-103	Power Supply Cable	
	0700-004-065	Power Cord Assy	
	0700-004-022	Power Supply	
	0700-004-019	Docker Ground Cable Assy	
Test 2: Earth Resistance	Docking Unit		0700-004-000 0700-005-000
	0700-004-103	Power Supply Cable	
	0700-004-065	Power Cord Assy	
	0700-004-022	Power Supply	
	0700-004-019	Docker Ground Cable Assy	
Test 3: Other Electrical Inspections	Docker		0700-004-000 0700-005-000
	0700-004-103	Power Supply Cable	
	0712-005-001	Docker Controller Board	
	0700-004-065	Power Cord Assy	
	0700-004-055	Pneumatic Compressor Assy	

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Test 3: Cont.	Docker		0700-004-000 0700-005-000
	0712-006-001	Cooling Fan Assy	
	0700-004-080	Offload Pump	
	0712-020-001	IR Transceiver Board	
	0700-004-475	Sprinkler Valve	
	0700-004-019	Docker Ground Cable Assy	
	0700-004-022	Power Supply	
	0590-060-006	Power Switch	
	Any Solenoid		
	Any Wire Harness		
	Any Ribbon Cable		
Test 4: Complete Rover functional Test/Docking Cycling Verification	Docker		0700-004-000 0700-005-000
	0700-004-103	Power Supply Cable	
	0712-005-001	Docker Controller Board	
	0700-004-065	Power Cord Assy	
	0700-004-055	Pneumatic Compressor Assy	
	0712-006-001	Cooling Fan Assy	
	0700-004-080	Offload Pump	
	0712-020-001	IR Transceiver Board	
	0700-004-475	Sprinkler Valve	
	0700-004-019	Docker Ground Cable Assy	
	0700-004-022	Power Supply	
	0590-060-006	Power Switch	
	Any Solenoid		
	Any Wire Harness		
	Any Ribbon Cable		
Test 5: Level Sensor Calibration and Calibration Verification	Docker	Test 5 not required for Docker repairs.	0700-004-000 0700-005-000
Test 6: Vacuum Level Verification	Docker	Test 5 not required for Docker repairs	0700-004-000 0700-005-000

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Details continued:

Test 1: Hi-Pot Test

Note: **DO NOT TOUCH SYSTEM WHILE UNDER TEST!**

- Perform the test using a calibrated Hi-Pot tester.
- **All Hi-Pot testing will be performed with the trip current set to 10mA.**
- Verify that Hi-Pot tester is functional by touching test leads together.
Fault indicator must activate.
- Reset Hi-Pot tester and clamp live and neutral leads of power cord plug (refer to figure 1) together to prevent damage to unit.
- Turn Rover/Docker power switch to the "ON" position.
- **For Rover:** Hi-Pot test at 1500VAC for 1 second by touching one lead to clamp and other lead to earth pin on power cord plug.
- **For Docker:** Hi-Pot test at 820VAC for one second by touching one lead to clamp and other lead to earth pin on power cord plug.
- Fault indicator must not activate for unit to pass test.

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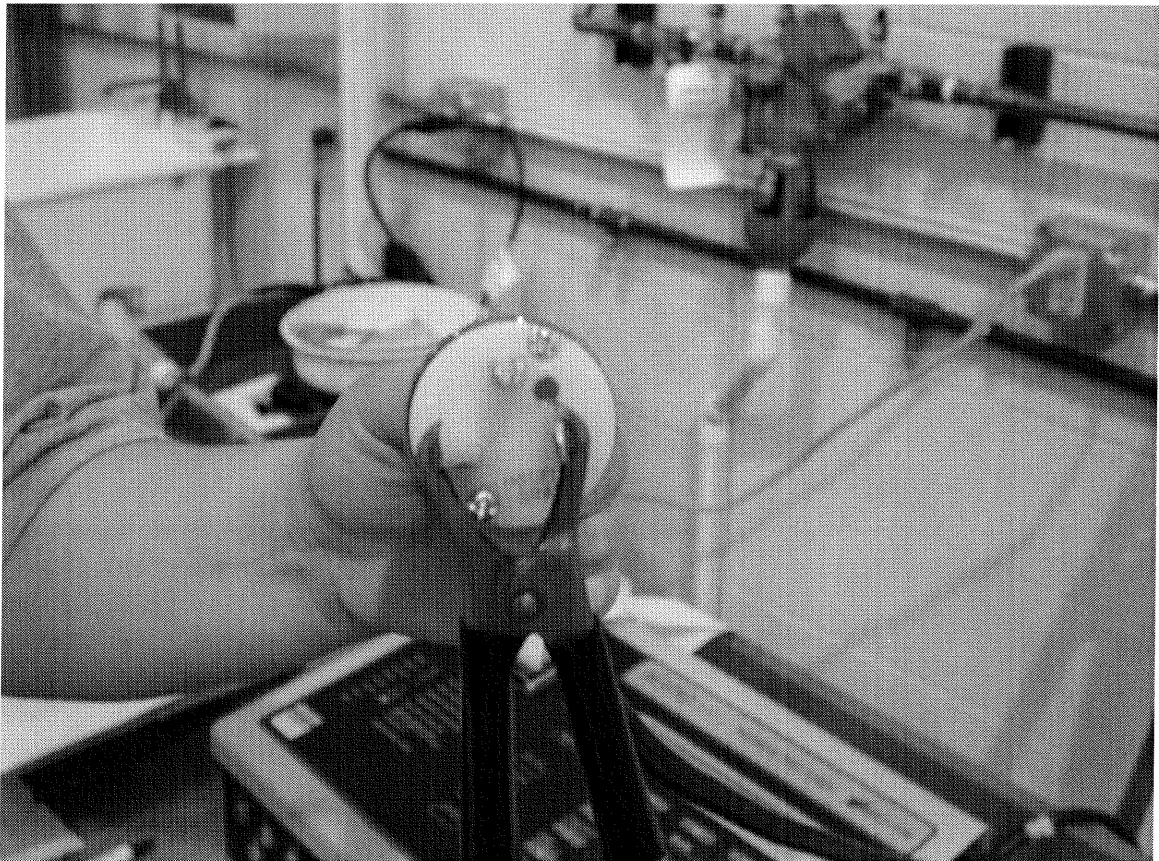


Figure 1: (Showing Hot and Neutral pins clamped together on a 20 amp plug).

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Test 2: Earth Resistance

NOTE: DO NOT TOUCH SYSTEM WHILE UNDER TEST.

- Turn Rover / Docker to OFF.
- Perform the test using a calibrated Digital Safety Analyzer, Dale Technology model LT544D plus, or equivalent
- Plug the Rover / Docker into the safety analyzer
- **For Rover:** Plug chassis clip into analyzer and attach alligator clip end to one of the two vacuum regulator mounting bolts, inside smoke evacuator filter chamber.

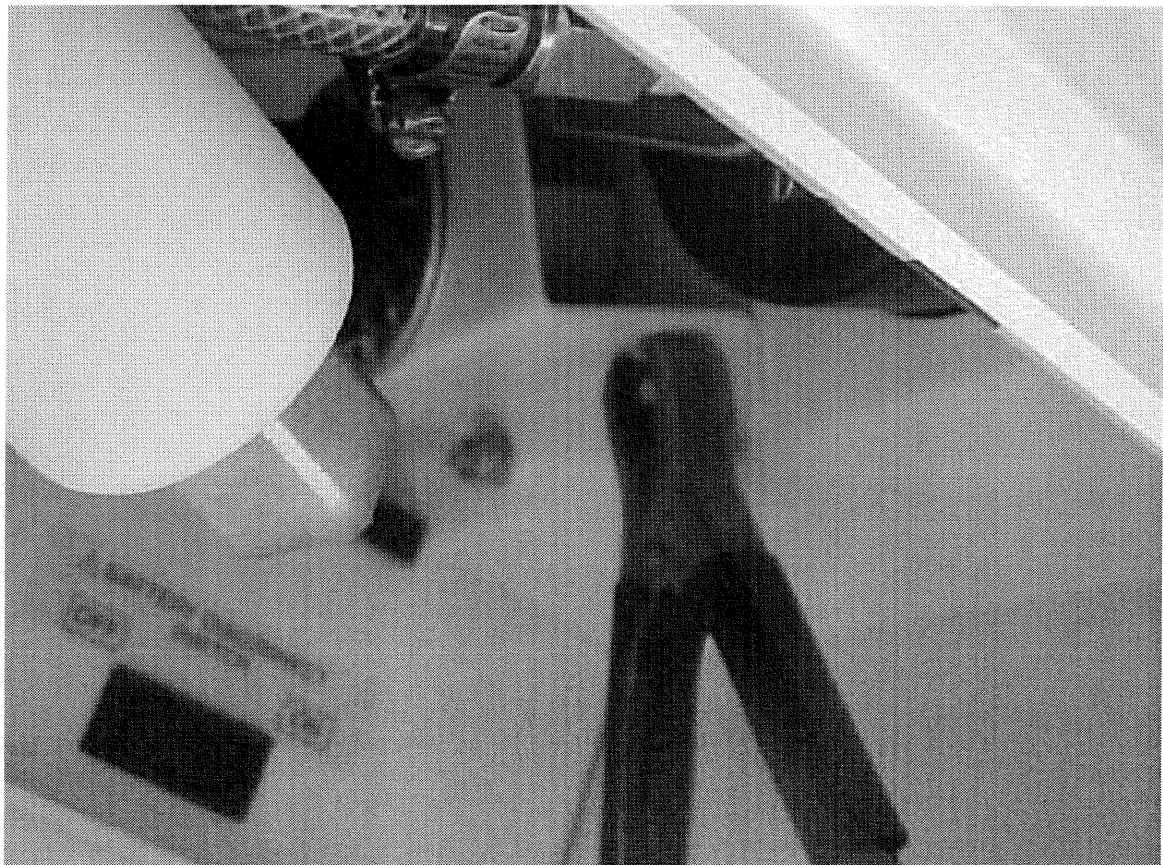


Figure 2

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- **For Docker:** Plug chassis clip into analyzer and attach alligator clip end to one of the ground studs on the back panel.



Figure 3

- Set the Analyzer to Normal Polarity and Neutral Open.
- Measure earth (ground) resistance by placing the analyzer dial to the "chassis resistance" position.
- **For Rover:** Resistance must be < .180 ohms.
- **For Docker:** Resistance must be < .090 ohms.

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Test 3: Other Electrical Inspections

A. Earth Leakage Current Test (Rover only)

- Perform the test using a calibrated Digital Safety Analyzer, Dale Technology model LT544D plus, or equivalent
- Plug the Rover into the safety analyzer
- Remove Smoke Pre-filter and HEPA filter
- Measure and record Earth Leakage Current according to the combinations listed below - the following functions should be on at maximum settings (as appropriate) when conducting the test:
 - i. Smoke Evacuator
 - ii. Vacuum Pump (set knob to maximum)
 - iii. Power Pole running upwards
- NOTE: Rover will not run when the "Neutral" switch is in the "open" position. This is normal and accepted. Rover functions may turn / off with changes between the settings below. Verify that required functions are running before recording the maximum value for each combination requiring the "neutral" switch being placed in the "closed" position.
- Turn the analyzer dial to the "Leakage Current" position. The "Leakage" switch must be depressed toward the "Earth" label to record this reading.

Earth Leakage Current must not exceed limits stated below:

<u>Analyzer settings</u>	<u>Leakage Current Limit</u>
Norm Pol, Neutral closed	< 300 μ A
Reverse Pol, Neutral closed	< 300 μ A
Norm Pol, Neutral open	< 1000 μ A
Reverse Pol, Neutral open	< 1000 μ A

B. Enclosure Leakage Current (Rover only)

- Perform the test using a calibrated Digital Safety Analyzer, Dale Technology model LT544D plus, or equivalent

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- Plug the Rover into the safety analyzer
- Remove Smoke Pre-filter and HEPA filter
- Plug the chassis clip into the safety analyzer. Connect alligator clip end of chassis clip to screw head of one of the screws holding down the Fluid Collection Canister Cap.

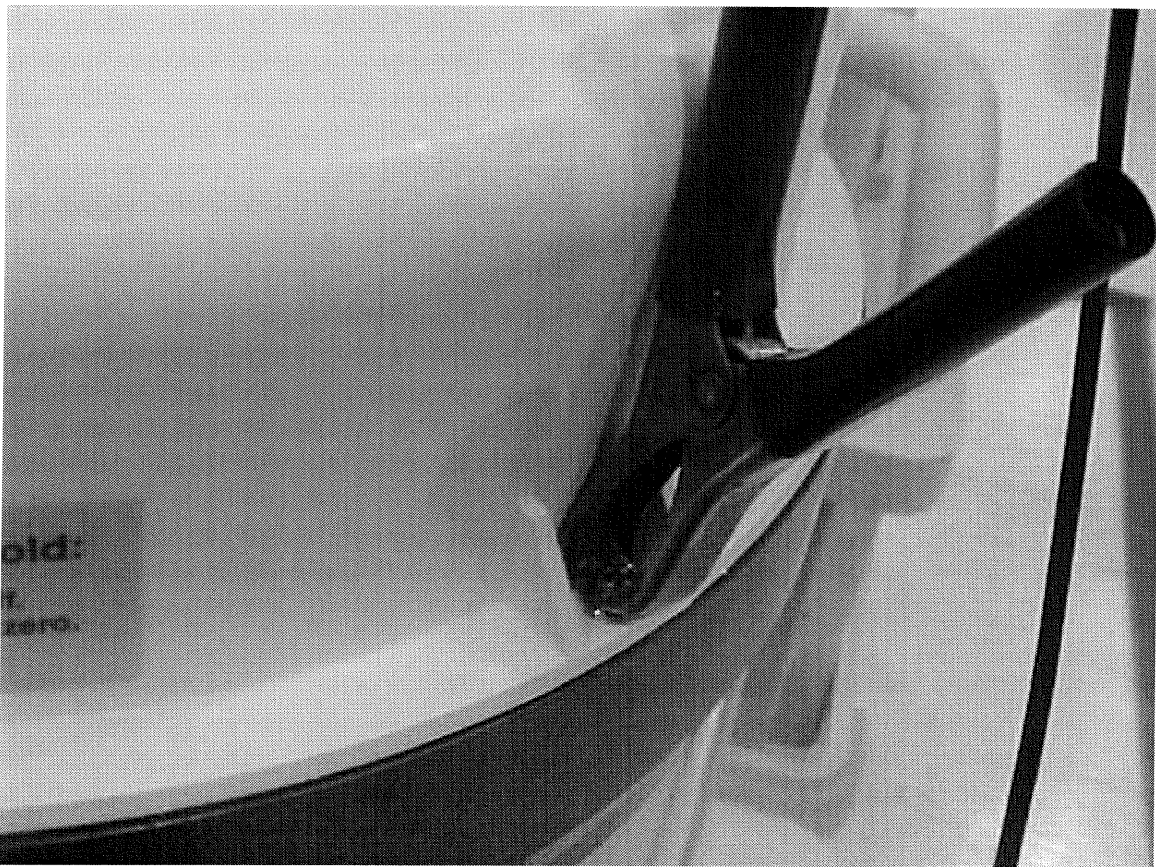


Figure 4

- Measure and record Enclosure Leakage Current according to the combinations listed below - the following functions should be on at maximum settings (as appropriate) when conducting the test:
 - i. Smoke Evacuator
 - ii. Vacuum Pump (set knob to maximum)

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iii. Power Pole running upwards

- NOTE: Rover will not run when the “Neutral” switch is in the “open” position. This is normal and accepted. Rover functions may turn / off with changes between the settings below. Verify that required functions are running before recording the maximum value for each combination requiring the “neutral” switch being placed in the “closed” position.
- Turn the analyzer dial to the “Leakage Current” position. The “Leakage” switch must be depressed toward the “Chassis” label to record this reading.

Enclosure Leakage Current must not exceed limits stated below:

<u>Analyzer settings</u>	<u>Leakage Current Limit</u>
Norm Pol, Neutral closed	< 100 μ A
Reverse Pol, Neutral closed	< 100 μ A
Norm Pol, Neutral open	< 300 μ A
Reverse Pol, Neutral open	< 300 μ A

C. Amp Draw Test

- Perform the test using a calibrated Digital Safety Analyzer, Dale Technology model LT544D plus, or equivalent
- Plug the Rover into the safety analyzer
- Remove Smoke Pre-filter and HEPA filter Measure and record Amp Draw by placing the analyzer dial in the “Instrument Current” position
- **For Rover:** the following functions should be on at maximum settings (as appropriate) when conducting the test:
 - i. Smoke Evacuator
 - ii. Vacuum Pump (set knob to maximum)
 - iii. Power Pole running upwards
- **For Docker:** using a Rover filled with 10 liters of water, perform a docking cycle and measure peak Amp draw.

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- Rover amp draw must be < 16 Amps.
- Docker amp draw must be < 3 Amps.

D. IEC601 Regulation Check (Rover only)

- Ensure that the Blue/Brown twisted pair of wires within the circuit board tower (Transformer/Circuit Breaker cable and Power Cord) are secured sufficiently so that they cannot touch any components on the tower circuit board.

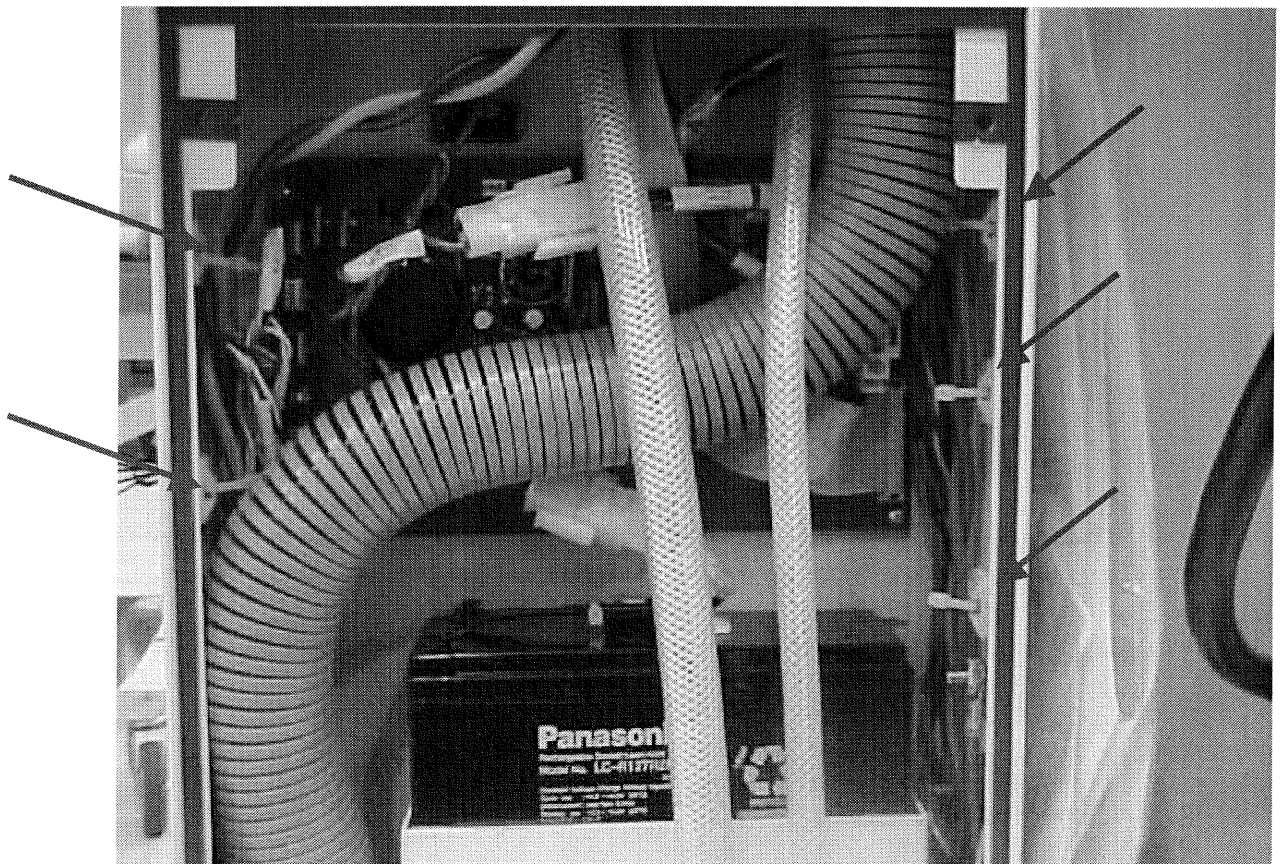


Figure 5

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Test 4: Complete Rover Functional Check / Docking Cycle Verification

- Inspect the Function of the vacuum pump, power pole, and smoke blower. In addition, perform a docking cycle (including 1 extra rinse cycle) and ensure that all components function properly and all expected responses occur.

Test 5: Calibration Verification

- **For Pressure Sensor Rovers:**
 - Locate clean fresh room temperature water source
 - Fill Rover Tank to 3 liters with room temperature water
 - Confirm Display readout accuracy to be 3 liters +/- .200
 - Fill Rover Tank to 8 liters with room temperature water
 - Confirm Display readout accuracy to be 8 liters +/- .200
 - Fill Rover Tank to 13 liters with room temperature water
 - Confirm Display readout accuracy to be 13 liters +/- .200
 - Fill Rover Tank to 18 liters with room temperature water
 - Confirm Display readout accuracy to be 18 liters +/- .200
 - Fill Rover Tank to 21 liters with room temperature water
 - Confirm Display readout accuracy to be "Full 20.0". If filling using suction from the vacuum pump, the vacuum pump should shut off automatically.
 - Check bond between fluid container and fluid container base for signs of leaks

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Test 5: Calibration Verification (continued)

- **For Level Sensor Rovers:**
 - Locate clean fresh water source
 - Fill Rover Tank to 350 mL with water
 - Confirm Display readout accuracy to be .350 ml +/- .200
 - Fill Rover Tank to 750 mL with room temperature water
 - Confirm Display readout accuracy to be 750 mL +/- .200
 - Fill Rover Tank to 15 liters with room temperature water
 - Confirm Display readout accuracy to be 15 liters +/- .200
 - Fill Rover Tank to 21 liters with room temperature water
 - Confirm Display readout accuracy to be "Full 20.0". If filling using suction from the vacuum pump, the vacuum pump should shut off automatically.
 - Check bond between fluid container and fluid container base for signs of leaks

Test 6: Vacuum Level Verification

- Turn the vacuum pump on with the manifold port occluded and adjust the vacuum regulator to achieve maximum vacuum. Using the vacuum gage on the Rover, verify a vacuum of 19-20" Hg.

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Service Bulletin Number SB-0125Rev Level NONERoutine Service Bulletin XSafety Service Bulletin

Applicability:

Stryker Subsidiary Stryker Field Service X

Approval	Name <u>Shayla Reed</u>	Signature <u>[Signature]</u>	Date <u>4-28</u>
Originator	<u>Rob Cooley</u>	<u>[Signature]</u>	<u>3/18/03</u>
Quality	<u>AL BEVERAGE</u>	<u>[Signature]</u>	<u>3/19/03</u>
Manufacturing	<u>Steve Hornum</u>	<u>[Signature]</u>	<u>3/18/03</u>
Senior Engineer	<u>T. O'Keefe</u>	<u>[Signature]</u>	<u>3/25/03</u>
Materials	<u>TORI SKINNER</u>	<u>[Signature]</u>	<u>3/27/03</u>

Title: Rover Pressure Transducer/Level Sensor Calibration

Purpose: Volume level Calibration procedures to assist with the maintenance and servicing of the Neptune product.

Scope: 700-1 (Pressure Sensor), 700-1 (Level Sensor), and 700-3.

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Stryker Instruments Service Bulletin

Service Bulletin Number _____

Rev Level__NONE_____

Routine Service Bulletin _X_

Safety Service Bulletin_____

Step 1:

Calibration of Rover with 2.3 rev software

1. Connect battery, connect AC power cord, and turn Main Switch OFF.
2. Completely empty the Rover of fluid by docking the Rover and then manually emptying of all fluid (to manually empty, hold a bucket under the waste coupler and push in the coupler with a screwdriver. This will empty all remaining fluid from the Rover).
3. Calibration is to be performed on a stable, level surface in a room with an ambient between 60°F and 80°F.
4. Calibration is to be started with the Rover at room ambient temperature. (Vacuum pump to have run no more than 30 minutes within the previous 2 hours).
5. While depressing both the Pole Down and Smoke Mode buttons. Turn the Main Switch ON.
6. Unit will respond by alternately displaying "Calibration" and "Press no to Exit".
7. In sequence depress the Pole Up, Pole Down and Yes Buttons.
8. Unit should respond with "Empty Tank".
9. Go to **Pressure Sensor Models** calibration step 2.

Calibration of Rovers with 4.0 Software

1. Connect battery, connect AC power cord, and turn Main Switch OFF.
2. Completely empty the Rover of fluid (i.e. dock Rover with the water supply valve turned off to prevent the prefill).
3. Calibration is to be performed on a stable, level surface in a room with an ambient temperature between 60°F and 80°F.
4. Calibration is to be started with the Rover at room ambient temperature. (Vacuum pump to have run no more than 30 minutes within the previous 2 hours).
5. Turn the battery switch to "ON". While depressing both the Pole Down and Smoke Mode buttons, turn the Main Switch On. **Note:** On 700-3 Rovers, the Smoke Mode button is not visible but there is still a button present under the label (to the left of the "YES" button).

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6. Rover will display "Calibration, Press No to Exit".
7. Press, in sequence, Pole Up, Pole Down, "YES" button.
8. Rover will display "Clear Errors↑↓". Press the "YES" button.
9. Rover will display "Errors Cleared", and then return to displaying "Clear Errors↑↓".
10. Using the up and down arrows, select "Calibrate↑↓". Press the YES button.
11. Select the proper Sensor type.
12. If the unit is a pressure sensor model, follow the **Pressure Sensor Models** Calibration Step 2.
13. If the unit is a level sensor model, follow the **Level Sensor Models** Calibration Step 2.

Calibration of Rovers with 4.1 Software

1. Connect battery, connect AC power cord, and turn Main Switch OFF.
2. Completely empty the Rover of fluid (i.e. dock Rover with the water supply valve turned off to prevent the prefill).
3. Calibration is to be performed on a stable, level surface in a room with an ambient temperature between 60°F and 80°F.
4. Calibration is to be started with the Rover at room ambient temperature. (Vacuum pump to have run no more than 30 minutes within the previous 2 hours).
5. Turn the battery switch to "ON". While depressing both the Pole Down and Smoke Mode buttons, turn the Main Switch On. **Note:** On 700-3 Rovers, the Smoke Mode button is not visible but there is still a button present under the label (to the left of the "YES" button).
6. Rover will display "Calibration, Press No to Exit".
7. Press, in sequence, Pole Up, Pole Down, "YES" button.
8. Rover will display "Clear Errors↑↓". Press the "YES" button.
9. Rover will display "Errors Cleared", and then return to displaying "Clear Errors↑↓".
10. Using the up and down arrows, select "Calibrate↑↓". Press the YES button.
11. Select the proper Sensor type.

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12. If the unit is a pressure sensor model, follow the **Pressure Sensor Models** Calibration Step 2.
13. If the unit is a level sensor model, follow the **Level Sensor Models** Calibration Step 2.

Calibration of Rovers with 5.0 Software

1. Connect battery, connect AC power cord, and turn Main Switch OFF.
2. Completely empty the Rover of fluid (i.e. dock Rover with the water supply valve turned off to prevent the prefill).
3. Calibration is to be performed on a stable, level surface in a room with an ambient temperature between 60°F and 80°F.
4. Calibration is to be started with the Rover at room ambient temperature. (Vacuum pump to have run no more than 30 minutes within the previous 2 hours).
5. Turn the battery switch to "ON". While depressing both the Pole Down and Smoke Mode buttons, turn the Main Switch On. **Note:** On 700-3 Rovers, the Smoke Mode button is not visible but there is still a button present under the label (to the left of the "YES" button).
6. Rover will display "Diagnostic Mode", then "Review Errors↑↓". Using up & down arrows, select "Calibration↑↓" and press the "YES" button.
7. Rover will display "Calibration, Press No to Exit".
8. Press, in sequence, Pole Up, Pole Down, "YES" button.
9. Rover will display "Clear Errors↑↓". Press the "YES" button.
10. Rover will display "Errors Cleared", and then return to displaying "Clear Errors↑↓".
11. Using the up and down arrows, select "Calibrate↑↓". Press the YES button.
12. Select the proper Sensor type.
13. If the unit is a pressure sensor model, follow the **Pressure Sensor Models** Calibration Step 2.
14. If the unit is a level sensor model, follow the **Level Sensor Models** Calibration Step 2.

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Service Bulletin Number _____

Rev Level __NONE__

Routine Service Bulletin __X__

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Step 2: Calibration

Pressure Sensor Models:

1. Unit should respond with "Pressure Sensor". Then, "Empty Tank".
2. Depress the "YES" button.
3. Unit should respond "FILL TO 1000mL".

Note: Room temperature water is 65F-75F for the purposes of this Instruction.

4. Using a graduated fluid container, fill Rover with 1000mL of room temperature water.
5. Turn on the Vacuum pump and apply 15 +/-1 Hg to the canister.
6. Allow for the water height to stabilize and bubbling of excess air from the system to stop.
7. Turn off Vacuum pump and allow the Vacuum to bleed off.
8. Depress the "YES" button. Display should then read "FILL TO 5000 mL".
9. Fill Rover with an additional 4000mL of additional room temperature water.
10. Turn on the vacuum pump and apply 15"+/-"Hg to the canister.
11. Allow for the water height to stabilize and bubbling of excess air from the system to stop.
12. Turn off Vacuum Pump and allow the vacuum to bleed off.
13. Depress the "YES" button. Display should then read "FILL TO 10000mL".
14. Fill Rover with an additional 5000mL of additional room temperature water.
15. Turn on the Vacuum pump and apply 15"+/-"Hg to the canister.
16. Allow for the water height to stabilize and bubbling of excess air from the system to stop.
17. Depress the "YES" button. Display should then read "FILL TO 15000mL".
18. Fill Rover with an additional 5000mL of additional room temperature water.
19. Turn on the Vacuum pump and apply 15"+/-"Hg to the canister.
20. Allow for the water height to stabilize and bubbling of excess air from the system to stop.
21. Depress the "YES" button. Display should then read "FILL TO 20000mL".
22. Fill Rover with an additional 5000mL of additional room temperature water.

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23. Turn on the Vacuum pump and apply 15" +/- "Hg to the canister.
24. Allow for the water height to stabilize and bubbling of excess air from the system to stop.
25. Turn off Vacuum pump and allow the vacuum to bleed off.
26. Depress the "YES" button. Rover will display "Calibrate↑↓".
27. Using the up and down arrows, select "Exit Menu↑↓". Press the "YES" button. Rover will display "Calibration↑↓".
28. Using the up and down arrows, select "Exit Menu↑↓". Press the "YES" button to exit the Diagnostic Mode.
29. Calibration is complete.
30. Dock the Rover to remove all fluid.

Level Sensor Models:

1. Unit should respond with "Level Sensor...", then "Empty Tank".
2. Depress the "Yes" button.
3. Unit should respond "FILL TO 200mL".
4. Use a calibrated pipette for all water additions up to 1000mL.
5. Fill Rover to 200mL of water.
6. Apply 10" +/- 1 Hg to the canister. The Vacuum pump will remain running at this pressure for the entire Calibration sequence.
7. Allow for the water height to stabilize and bubbling of excess air from the system to stop.
8. Use the following steps to fill the canister up in 100mL increments for proper calibration of the unit.
 - A. With the Vacuum pump running, depress the "YES" button. Display should then read "FILL TO 300mL".
 - B. Add 100mL of water, which will fill the canister to a total of 300mL.
 - C. Allow for the water height to stabilize and bubbling of excess air from the system to stop.
 - D. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 400mL".
 - E. Add 100mL of water, which will fill the canister to a total of 400mL.
 - F. Allow for the water height to stabilize and bubbling of excess air from the system to stop.
 - G. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 500mL".
 - H. Add 100mL of water, which will fill the canister to a total of 500mL.

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- I. Allow for the water height to stabilize and bubbling of excess air from the system to stop.
- J. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 600mL".
- K. Add 100mL of water, which will fill the canister to a total of 600mL.
- L. Allow for the water height to stabilize and bubbling of excess air from the system to stop.
- M. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 700mL".
- N. Add 100mL of water, which will fill the canister to a total of 700mL.
- O. Allow for the water height to stabilize and bubbling of excess air from the system to stop.
- P. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 800mL".
- Q. Add 100mL of water, which will fill the canister to a total of 800mL.
- R. Allow for the water height to stabilize and bubbling of excess air from the system to stop.
- S. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 900mL".
- T. Add 100mL of water, which will fill the canister to a total of 900mL.
- U. Allow for the water height to stabilize and bubbling of excess air from the system to stop.
- V. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 1000mL".
- W. Add 100mL of water, which will fill the canister to a total of 1000mL.
- X. Allow for the water height to stabilize and bubbling of excess air from the system to stop.
- Y. With the Vacuum pump running, depress the "YES" button. Display should read "FILL TO 20000mL". Note: This is a total of 20 Liters.
- 9. Add 19000mL (19 Liters), allow for the water height to stabilize and bubbling of excess air from the system to stop. With the Vacuum pump running, depress the "YES" button. The Display will go back to the menu options and display "Calibrate ↑↓".
- 10. Scroll the menu until it displays "Exit Menu ↑↓".
- 11. Depress the "YES" button and the Rover will display "Calibration ↑↓".
- 12. Scroll the menu until it displays "Exit Menu ↑↓".

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13. Depress the "YES" button to exit Diagnostic Mode.

Note: These last steps must be completed before the Rover is fully calibrated and working properly.

14. Unit will alternately display "Underfill error" and "Volume Disabled".

15. Dock the Rover, (this will clear the Error) and remove all the fluid.

16. Calibration is complete.

17. Verify Calibration as set in SB-0123.

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0126Rev level NONERoutine Service Bulletin XSafety Service Bulletin

Applicability:

Stryker Subsidiary Stryker Field Service X

Approval	Name	Signature	Date
Originator	ROB COOLEY	<i>Rob Cooley</i>	4/21/03
Quality	AL BEVERAGE	<i>Al Beverage</i>	4/21/03
Manufacturing	STEVE HORWATH	<i>Steve Horwath</i>	4/21/03
Senior Engineer	T. O'KEEFE	<i>T. O'Keefe</i>	4/21/03
Materials	TORI SKINNER	<i>Tori Skinner</i>	4-28-03

Title: Calibration of Pressure Transducer To Clear Autozero Error**Purpose: Neptune System Troubleshooting****Scope: 700-1 Rover (Pressure Transducer)****Distribution List: All Neptune service providers****Documents requiring revision: N/A****Details:**

Stryker Instruments Service Bulletin

Service Bulletin Number _____

Rev level NONE _____

Routine Service Bulletin X _____

Safety Service Bulletin _____

Calibration of Pressure Transducer To Clear Autozero Error

The Autozero error is caused by the Pressure Transducer's voltage output drifting more than 50 mV from the original voltage output that it was calibrated with.

Example: When the Rover is calibrated. The first step in the calibration sequence is to empty the Rover completely. The Display will read, "Empty tank". When you press yes, the Rover will record the Pressure Transducer voltage in memory and then will display "Fill to 1000mL". **Note:** the rest of the calibration does not have a direct effect on the Autozero error.

If the Empty tank voltage was 200mV then the unit will remember that as the Empty tank voltage. Every time the Rover is docked and left alone, the Rover will assume that the tank is empty and will measure the Pressure Transducer voltage after a two-hour period (if any button on the UIP is pressed before the two hour period is over, the Rover will not take the measurement).

After the two hours, the Rover takes the Pressure Transducer voltage measurement and compares it to the stored Empty tank voltage in memory. If the voltage varies more than 50mV from the voltage stored in memory (Example: If stored voltage is 200mV then <250mV or >150mV measurement is a good reading), the reading will be marked down as an error. If this occurs 92 times in a row, then the Autozero error will be displayed. To clear this error, you will need to recalibrate the Rover using the following procedure.

1. To clear an Autozero error. Use a multimeter that can reliably read with an accuracy of +/- 1mV.
2. Take all Pressure Transducer voltage measurements at the following test points:
 - A. On the User Interface Panels that have the 0712-012-001 main control board with the 0712-011-001 ADC board, take the voltage measurements with the Multimeters Red lead on the cathode (black band) and the black lead on the anode (red end) of D2 on the 0712-011-001 (small square board) PCB.
 - B. On the User Interface Panels that have the 0712-064-001 main control board, take the measurement with the Red lead on pin 2 of J4 and the black lead on Pin 3 of J4 on the 0712-064-001 PCB (SW1 must be positioned towards the yellow transformer T1).
3. Completely empty the Rover of all fluid and then enter the calibration menu. Take the Pressure Transducers measurement and record the voltage measured. Note: this is the Empty Tank voltage. After recording the voltage, complete the calibration sequence as noted in the Calibration Service Bulletin.
4. After the calibration is complete, Dock the Rover. At the end of the Docking cycle, when the Rover says "Extra Rinse Y/N", press N and let the Rover undock. At this point, if any buttons on the User Interface Panel are pressed, you will have to Dock the Rover again to clear the Autozero.
5. The only switch that can be activated is the On/Off Power switch. Take the Pressure Transducer measurement and compare it to the "Empty Tank" voltage that you recorded earlier. If the measured voltage after Docking is within 50mV of the "Empty Tank" voltage (Example: If the "Empty Tank" voltage is 200mV, then the voltage after docking has to be <250mV or >150mV to clear the Autozero error). Let the Rover set for two hours, without any buttons being pressed and the Autozero error will clear, (it is recommended that the Rover should be plugged in with the Power Switch turned on to keep the battery charged).
6. After the error is cleared, check the calibration accuracy and you are finished. If the Error has not cleared, then call Tech Support for further help.

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Stryker Instruments Service Bulletin

Service Bulletin Number SB-0127

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Approval	Name	Signature	Date
Originator	ROB COOLEY	<i>[Signature]</i>	5/15/03
Quality	AL BEVERAGE	<i>[Signature]</i>	5/15/03
Manufacturing	STEVE KONATH	<i>[Signature]</i>	5/15/2003
Senior Engineer	T. O'Keefe	<i>[Signature]</i>	5/21/03
Materials	TORI SKINNEIL	<i>[Signature]</i>	5/22/03

Title: Pressure Transducer Cooling Fan Not Running

Purpose: Neptune System Troubleshooting

Scope: 700-1 Rover (Pressure Transducer only)

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Stryker Instruments Service Bulletin

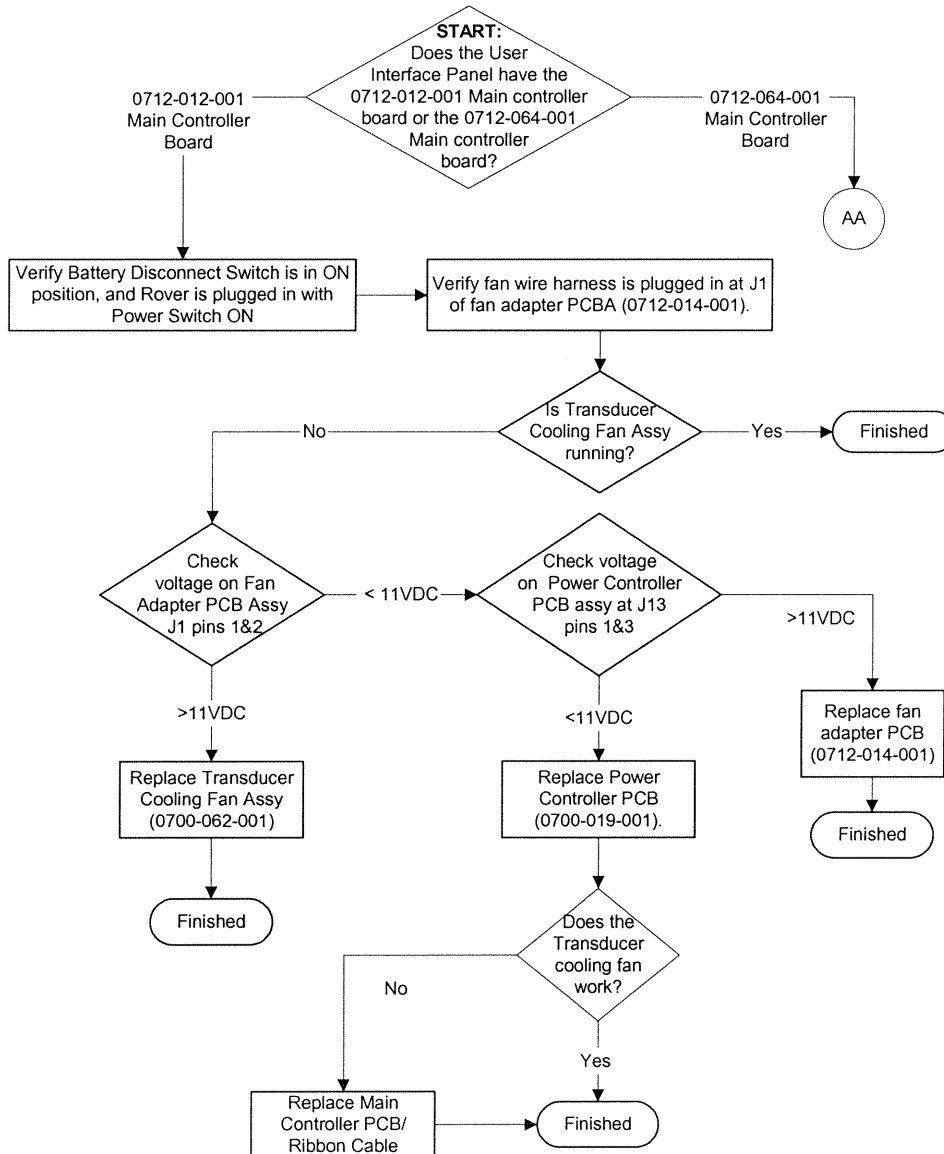
Service Bulletin Number _____

Rev Level__NONE_____

Routine Service Bulletin _X_

Safety Service Bulletin__

Pressure Transducer Cooling Fan Not Running Rover Model 700-1 (Pressure Transducer) only



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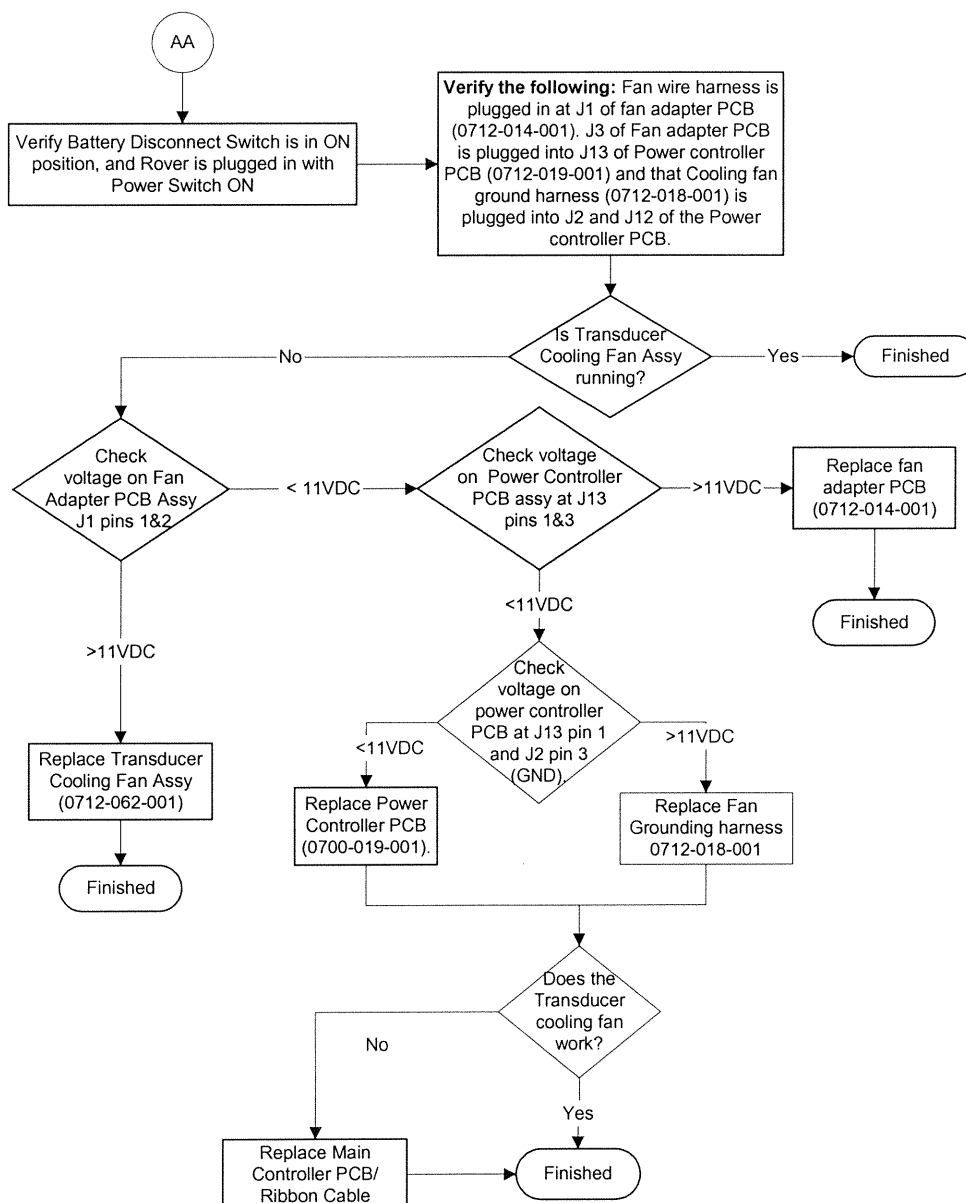
Service Bulletin Number _____

Rev Level__NONE_____

Routine Service Bulletin __X__

Safety Service Bulletin__

Pressure Transducer Cooling Fan Not Running Rover Model 700-1 (Pressure Transducer) only



Stryker Instruments Service Bulletin

Service Bulletin Number SB-0128Rev Level NONERoutine Service Bulletin XSafety Service Bulletin

Applicability:

Stryker Subsidiary Stryker Field Service X

Approval	Name	Signature	Date
Originator	Rob Cooley	<i>Rob Cooley</i>	5/7/03
Quality	Al BEVERAGE	<i>Al Beverage</i>	5/12/03
Manufacturing	Steve Howard	<i>Steve Howard</i>	5/7/03
Senior Engineer	T. O'Keefe	<i>T. O'Keefe</i>	5/21/03
Materials	TORI SKINNER	<i>Tori Skinner</i>	5/22/03

Title: No Power to Docker

Purpose: Neptune System Troubleshooting

Scope: 700-4, 700-5 Dockers

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Stryker Instruments Service Bulletin

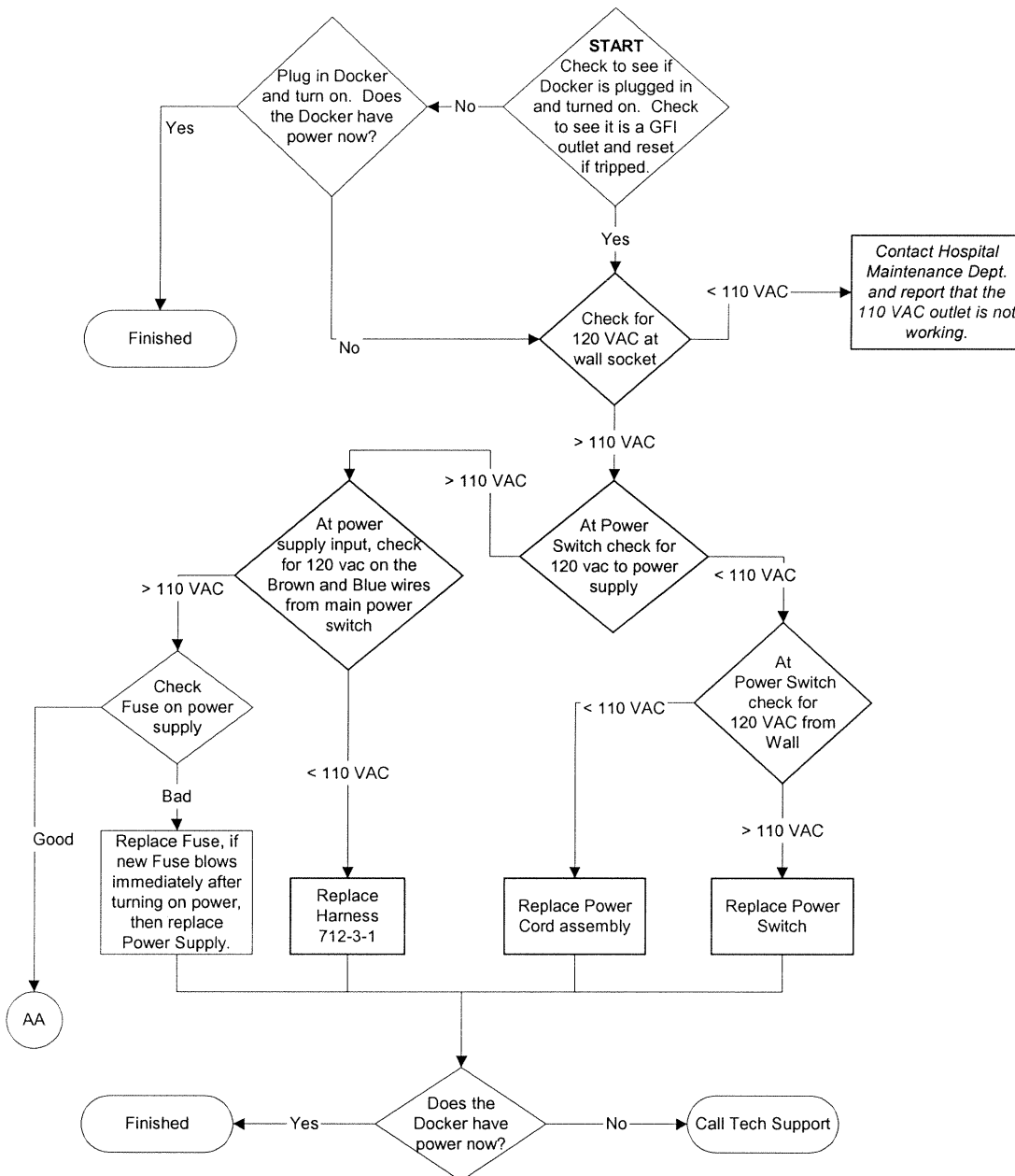
Service Bulletin Number _____

Rev Level NONE _____

Routine Service Bulletin X _____

Safety Service Bulletin _____

No Power to Docker



Stryker Instruments Service Bulletin

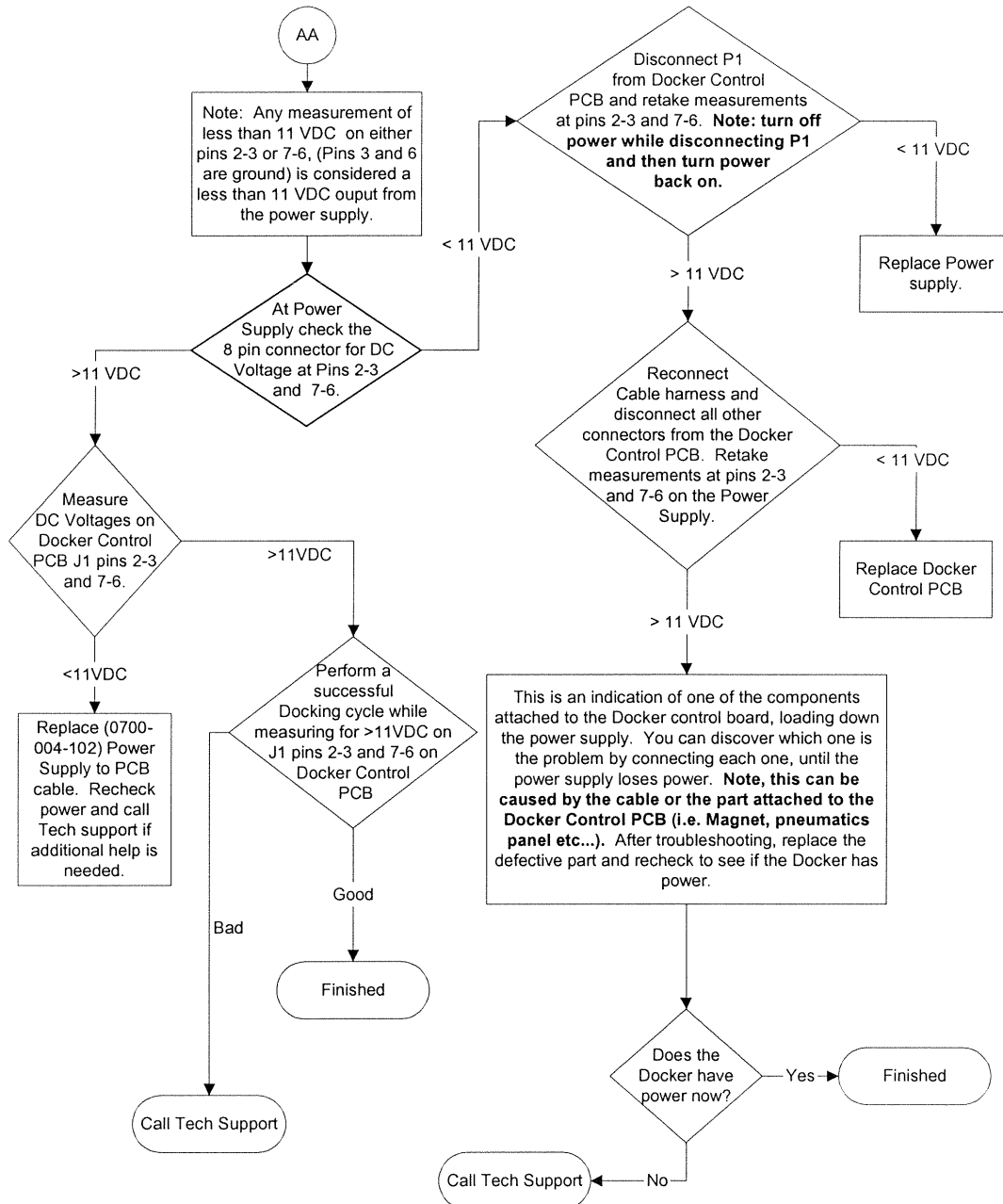
Service Bulletin Number _____

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin _____

No Power to Docker



Stryker Instruments Service Bulletin

Service Bulletin Number SB-0129

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Approval	Name	Signature	Date
Originator	Rob Cooley	<i>Rob Cooley</i>	5/30/03
Quality	Steve Henrich	<i>Steve Henrich</i>	5/30/03
Manufacturing	Al Beverage	<i>Al Beverage</i>	5/30/03
Senior Engineer	T. O'Keefe	<i>T. O'Keefe</i>	6/3/03
Materials	TORI SKINNER	<i>Tori Skinner</i>	6/3/03

Title: Docking Error #3/Low Battery

Purpose: Neptune System Troubleshooting

Scope: 700-1, 700-3 Rovers (Pressure Transducer and Level Sensor)

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Notes:

1. Docking error 3 stems from a power interruption (low battery) within the Rover.
2. Perform a close inspection of battery leads and connections. An intermittent connection in connectors can cause this problem.
3. Listen for proper macerator operation during docking sequence. The macerator should sound like it's turning with good power for a full 30 second docking cycle.
4. When finished, plug Rover in, turn on Power Switch and leave instructions to let Battery charge for at least 6 hours before using.

Stryker Instruments Service Bulletin

Service Bulletin Number _____

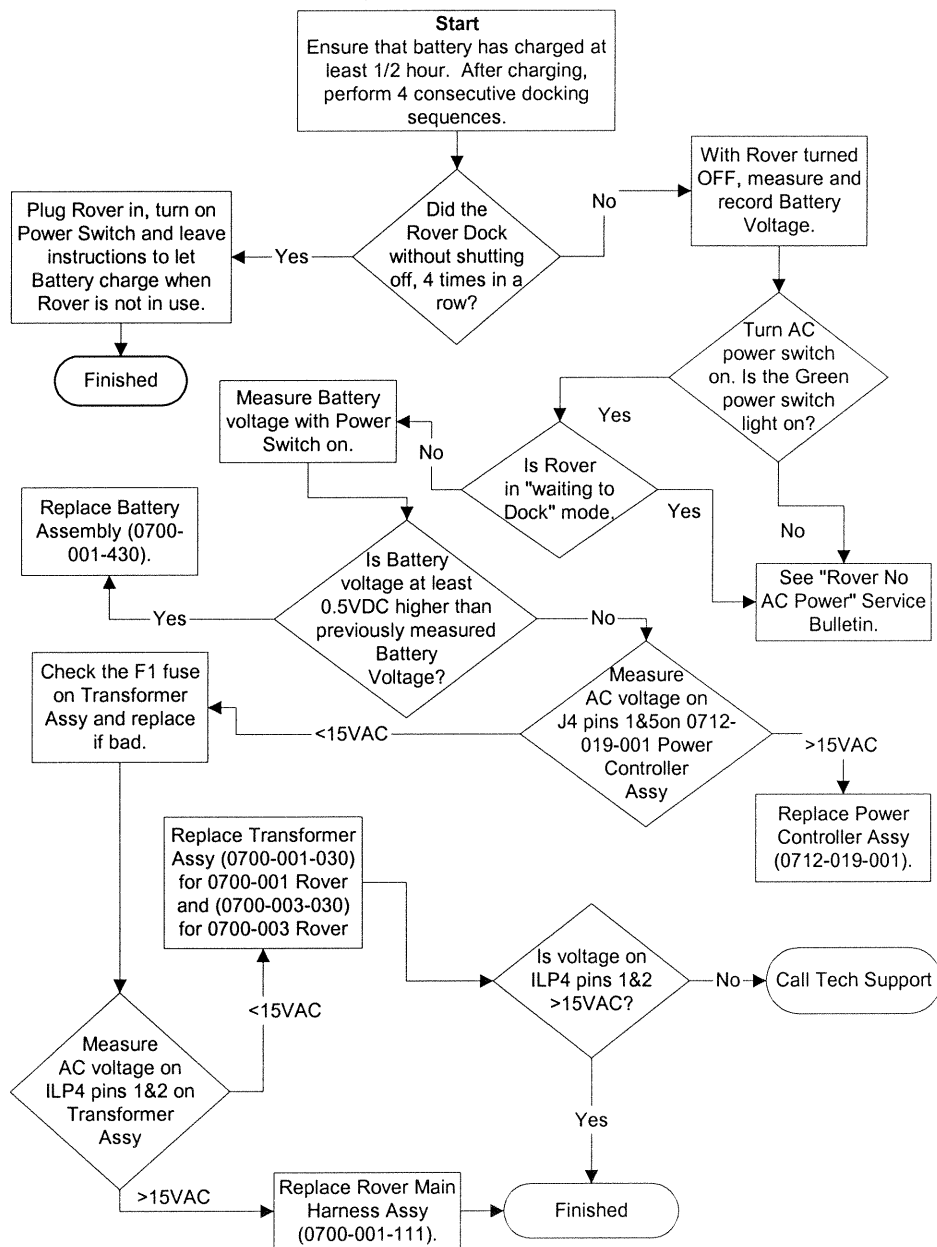
Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin _____

Docking Error #3

(Battery Dead during docking sequence)



Stryker Instruments Service Bulletin

Service Bulletin Number SB-0130

Rev Level NONE



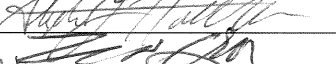


Routine Service Bulletin X

Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Approval	Name	Signature	Date
Originator	Rob Cooley		6/5/03
Quality	Al Beccare		6/5/03
Manufacturing	STEVE HORVATH		6/5/03
Senior Engineer	T. O'Keefe		6/5/03
Materials	H.M. Patrick		6/6/03

Title: Docking Error #2

Purpose: Neptune System Troubleshooting

Scope: All Neptune Rovers and Dockers

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Notes:

Stryker Instruments Service Bulletin

Service Bulletin Number _____

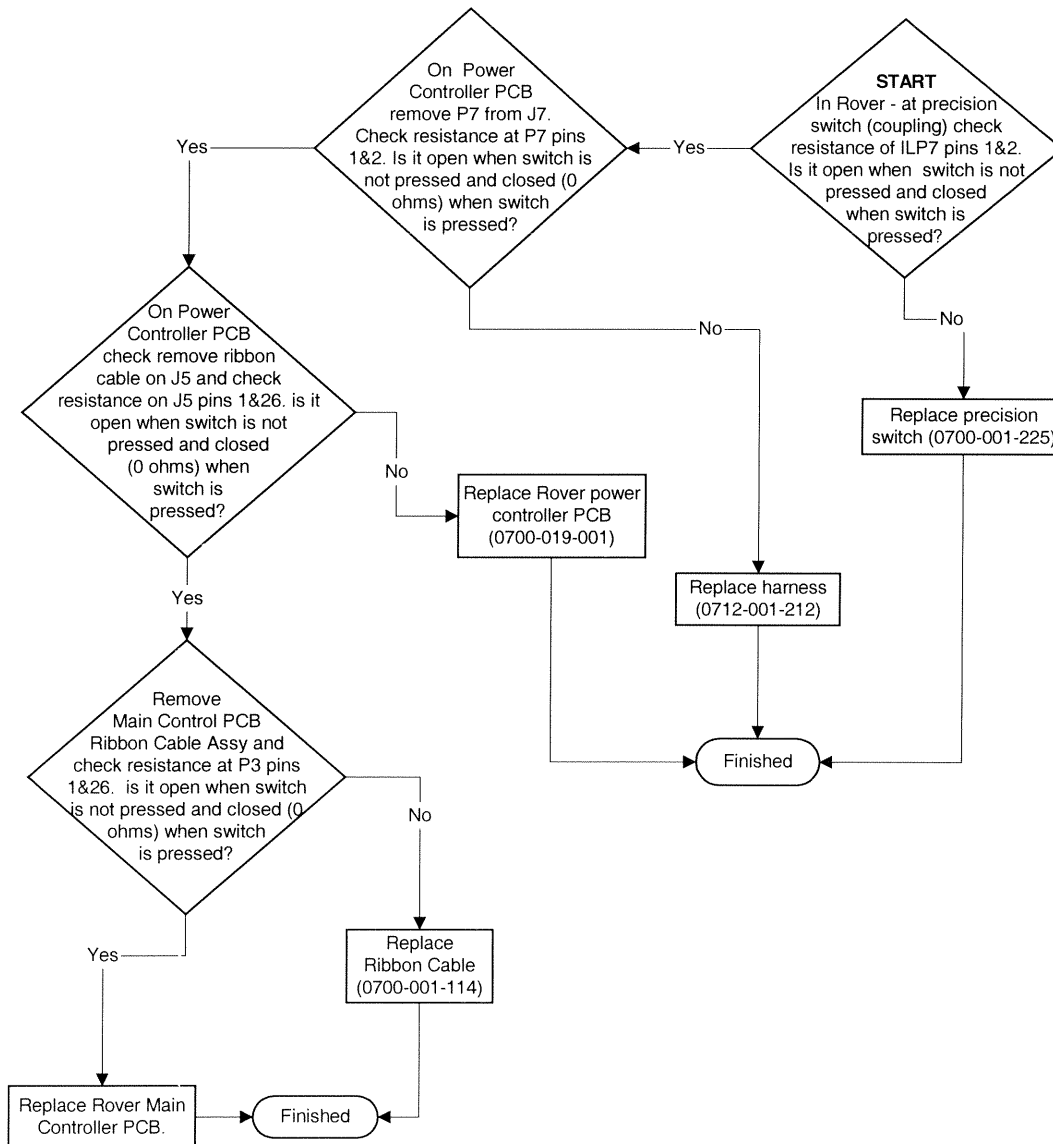
Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin _____

Docking Error #2

(Coupled Switch is closed before docking cycle begins)



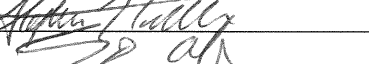
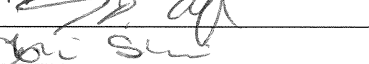
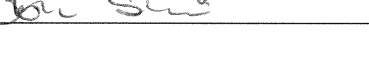


Stryker Instruments Service Bulletin

Service Bulletin Number SB-0131Rev Level NONERoutine Service Bulletin XSafety Service Bulletin

Applicability:

Stryker Subsidiary Stryker Field Service X

Approval	Name	Signature	Date
Originator	ROB COOLEY		6/10/03
Quality	A. Beresque		6/25/03
Manufacturing	S. Horvath		6/25/03
Senior Engineer	T. O'Keefe		6/10/03
Materials	TORI SKINNER		6/26/03

Title: Volume Error >300ml

Purpose: Neptune System Troubleshooting

Scope: 700-1 Rover (Pressure Transducer only)

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Note:

Stryker Instruments Service Bulletin

Service Bulletin Number _____

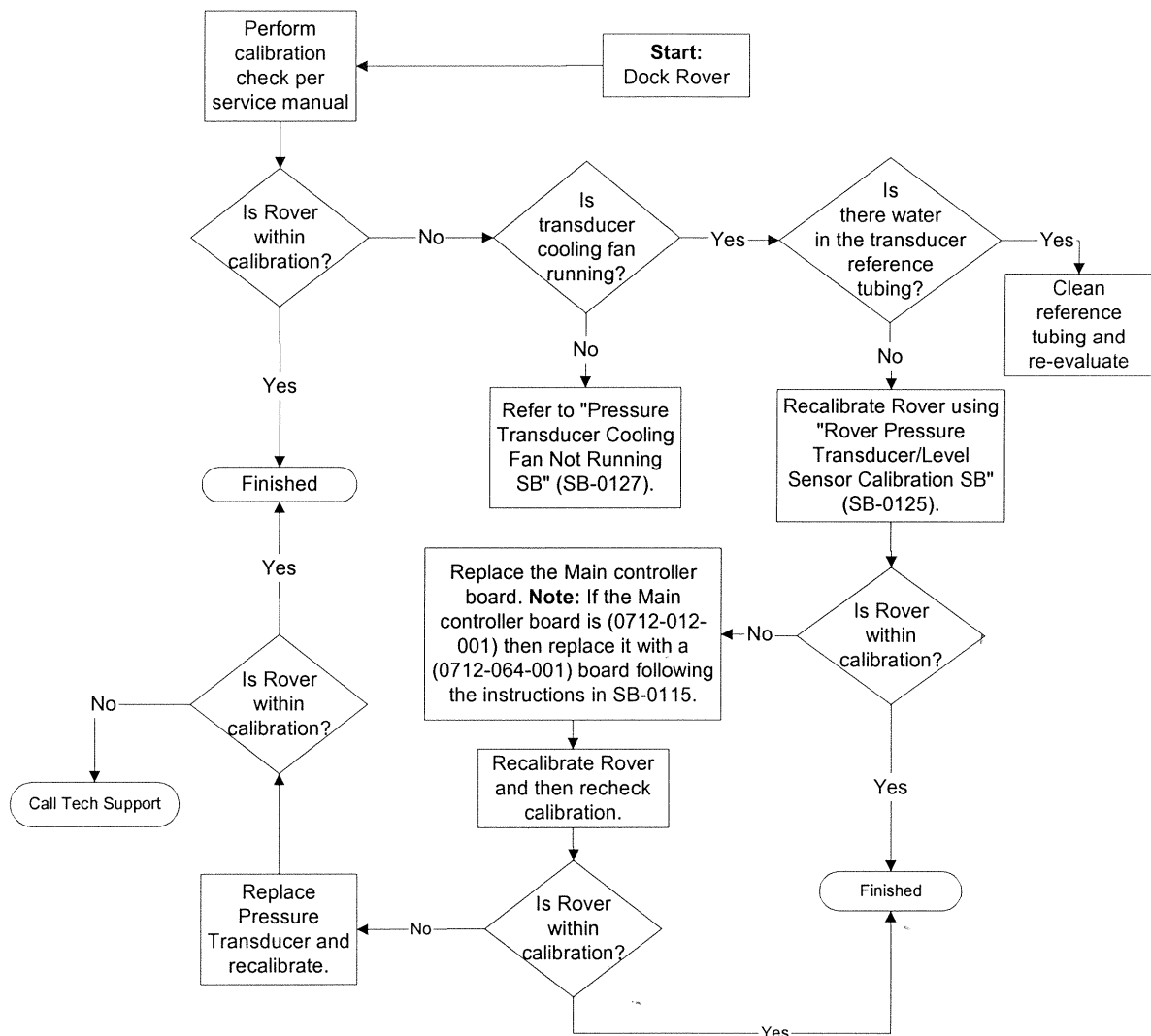
Rev Level NONE _____

Routine Service Bulletin X _____

Safety Service Bulletin _____

Volume Error > 300ml

Rover Model 700-1 (Pressure Transducer) only



Stryker Instruments Service Bulletin

Service Bulletin Number SB-0132Rev Level NONERoutine Service Bulletin XSafety Service Bulletin

Applicability:

Stryker Subsidiary Stryker Field Service X

Approval	Name	Signature	Date
Originator	Rob Cooley	<i>[Signature]</i>	6/4/03
Quality	AL Beverage	<i>[Signature]</i>	6/4/03
Manufacturing	STEVE HORVATH	<i>[Signature]</i>	6/4/03
Senior Engineer	T. O'Keefe	<i>[Signature]</i>	6/10/03
Materials	TORI SKINNER	<i>[Signature]</i>	6/26/03

Title: Rover Leaking Fluid

Purpose: Neptune System Troubleshooting

Scope: 700-1, 700-3 Rovers (Pressure Transducer and Level Sensor)

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Notes:

Stryker Instruments Service Bulletin

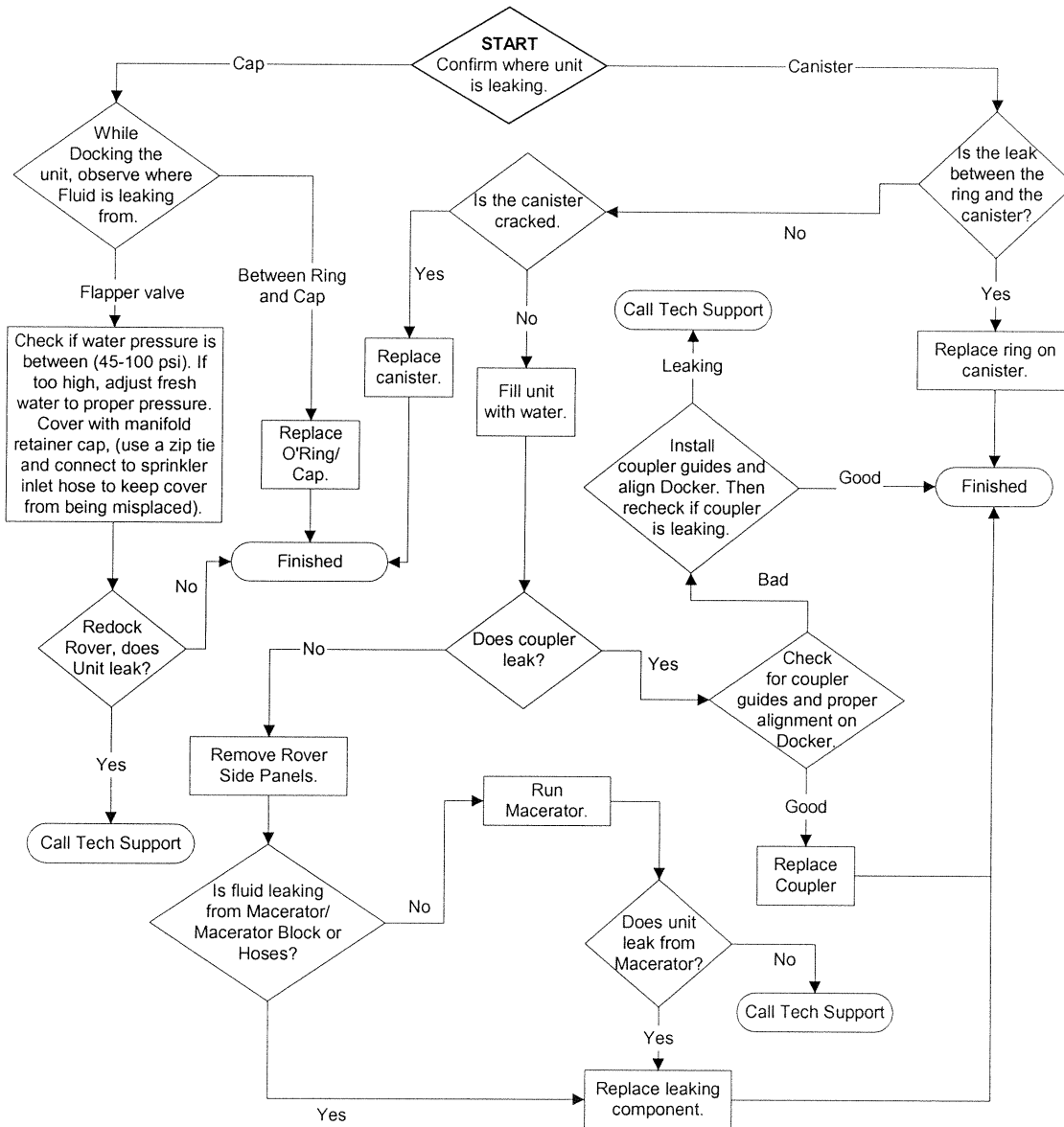
Service Bulletin Number _____

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin _____

Rover Leaking Fluid



Stryker Instruments Service Bulletin

Service Bulletin Number SB-0133

Rev Level NONE

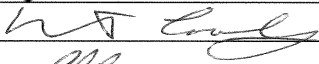
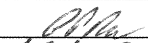
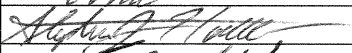
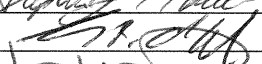
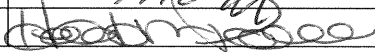
Routine Service Bulletin X

Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Approval	Name	Signature	Date
Originator	Rob Cooley		6/17/03
Quality	Al Beverage		6/17/03
Manufacturing	Steve Horvath		6/18/03
Senior Engineer	T. O'Keefe		7/2/03
Materials	H.M. Patrick		7/2/03

Title: Volume Error >175ml

Purpose: Neptune System Troubleshooting

Scope: 700-1, 700-3 Rovers (Level Sensor only)

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Notes:

Safety Service Bulletin____

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graph TD
    Start([Start: Dock Rover]) --> Calibrate[Calibrate Rover]
    Calibrate --> R1{Recheck calibration. Is Rover within calibration?}
    R1 -- Yes --> F1([Finished])
    R1 -- No --> R2{Is Rover within calibration?}
    R2 -- Yes --> F2([Finished])
    R2 -- No --> R3{Perform Calibration Check per Service Manual}
    R3 --> R2
    R3 --> R4{Is Rover within calibration?}
    R4 -- Yes --> F3([Finished])
    R4 -- No --> R5{Note: All measurements must be made with AC Power Switch On. Measure the voltage on J8 Pins 1&4 of the Main Control board (0712-064-001).}
    R5 -- > 10VDC --> R6{Take Canister Cap off Rover and inspect for cracks or fluid inside of Float Assembly. Is the Float Assembly damaged?}
    R6 -- Yes --> R7[Replace Float Assembly and recalibrate Rover.]
    R7 --> R8{Is Rover within calibration?}
    R8 -- Yes --> F4([Finished])
    R8 -- No --> R9[Call Tech Support]
    R9 --> R5
    R5 -- < 10VDC --> R10[Replace Main Control PCB and Recalibrate Rover and recheck calibration.]
    R10 --> R11{Is Rover within calibration?}
    R11 -- Yes --> F5([Finished])
    R11 -- No --> R12{Did the voltage increase from approximately 0.2VDC to 5.0VDC as the Float assembly was raised to the top of the Level Sensor Pole at a linear rate?}
    R12 -- No --> R13[Replace Float Assembly or Level Sensor and Recalibrate.]
    R13 --> R14{Is Rover within calibration?}
    R14 -- Yes --> F6([Finished])
    R14 -- No --> R15[Call Tech Support]
    R15 --> R12
    R12 -- Yes --> R16[Replace the Main Controller Board and recalibrate.]
    R16 --> R17{Is Rover within calibration?}
    R17 -- Yes --> F7([Finished])
    R17 -- No --> R18[Call Tech Support]
    R18 --> R12
  
```

Note: All measurements must be made with **AC Power Switch On**. Measure the voltage on J8 Pins 1&4 of the Main Control board (0712-064-001).

Note: If the Float Assy is lifted up to the top of the Level Sensor Pole, you could get a "Vol Sense Error". If this occurs then clear the error in Cal Mode.

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0134

Rev Level NONE

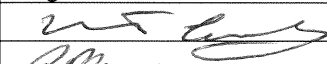
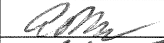
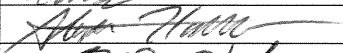
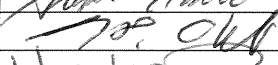

Routine Service Bulletin X

Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Approval	Name	Signature	Date
Originator	ROB COOLEY		7/2/03
Quality	AL BEVERAGE		7/15/03
Manufacturing	Steve TORJATH		7/2/03
Senior Engineer	T. O'KEEFE		7/4/03
Materials	HEIDI PATRICK		7/15/03

Title: Rover Has No AC Power

Purpose: Neptune System Troubleshooting

Scope: 700-1, 700-3 Rovers (Pressure Transducer and Level Sensor)

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Note:

Stryker Instruments Service Bulletin

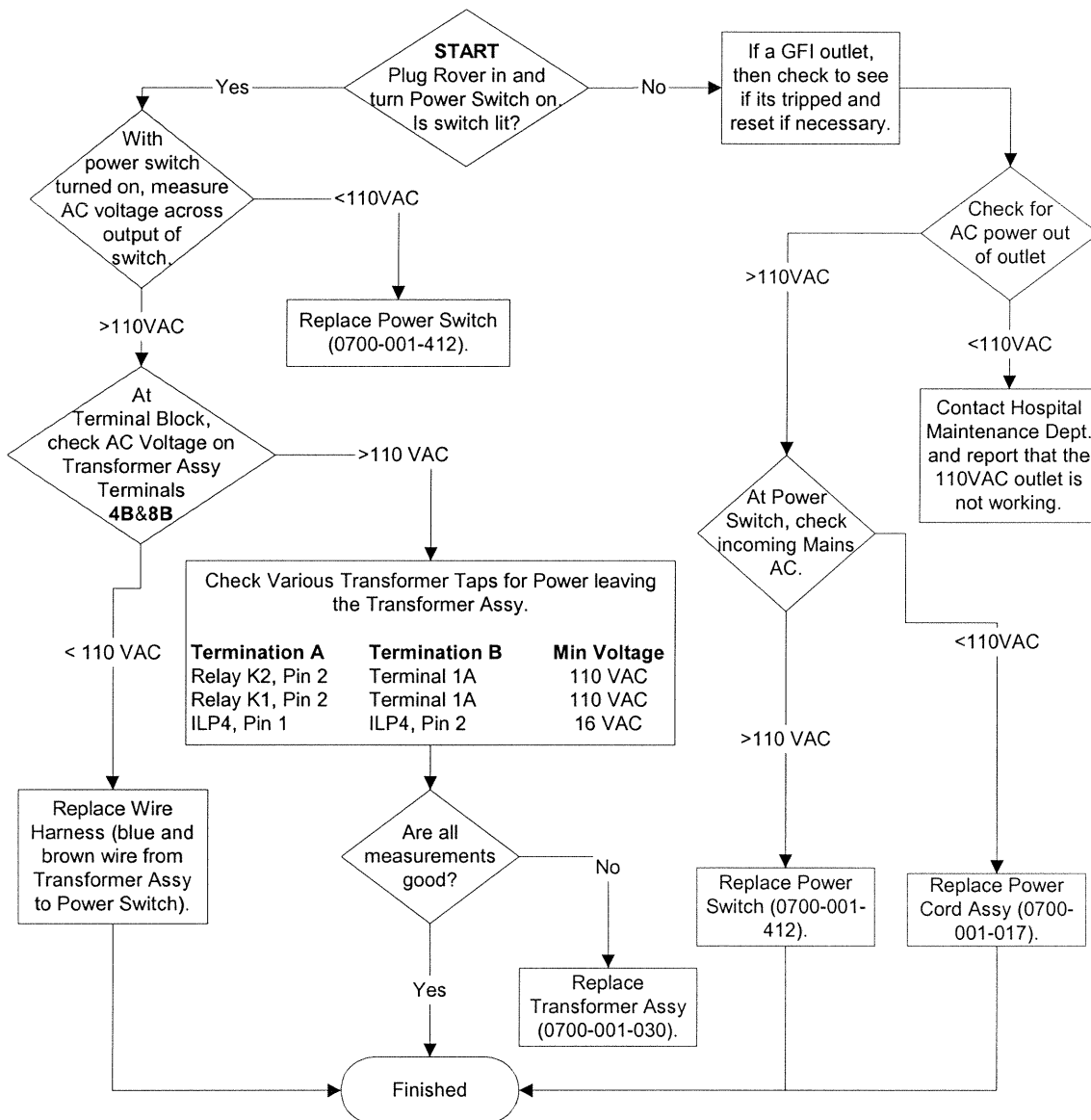
Service Bulletin Number _____

Rev Level __NONE__

Routine Service Bulletin __X__

Safety Service Bulletin _____

0700-001-000 Rover Has No AC Power



Stryker Instruments Service Bulletin

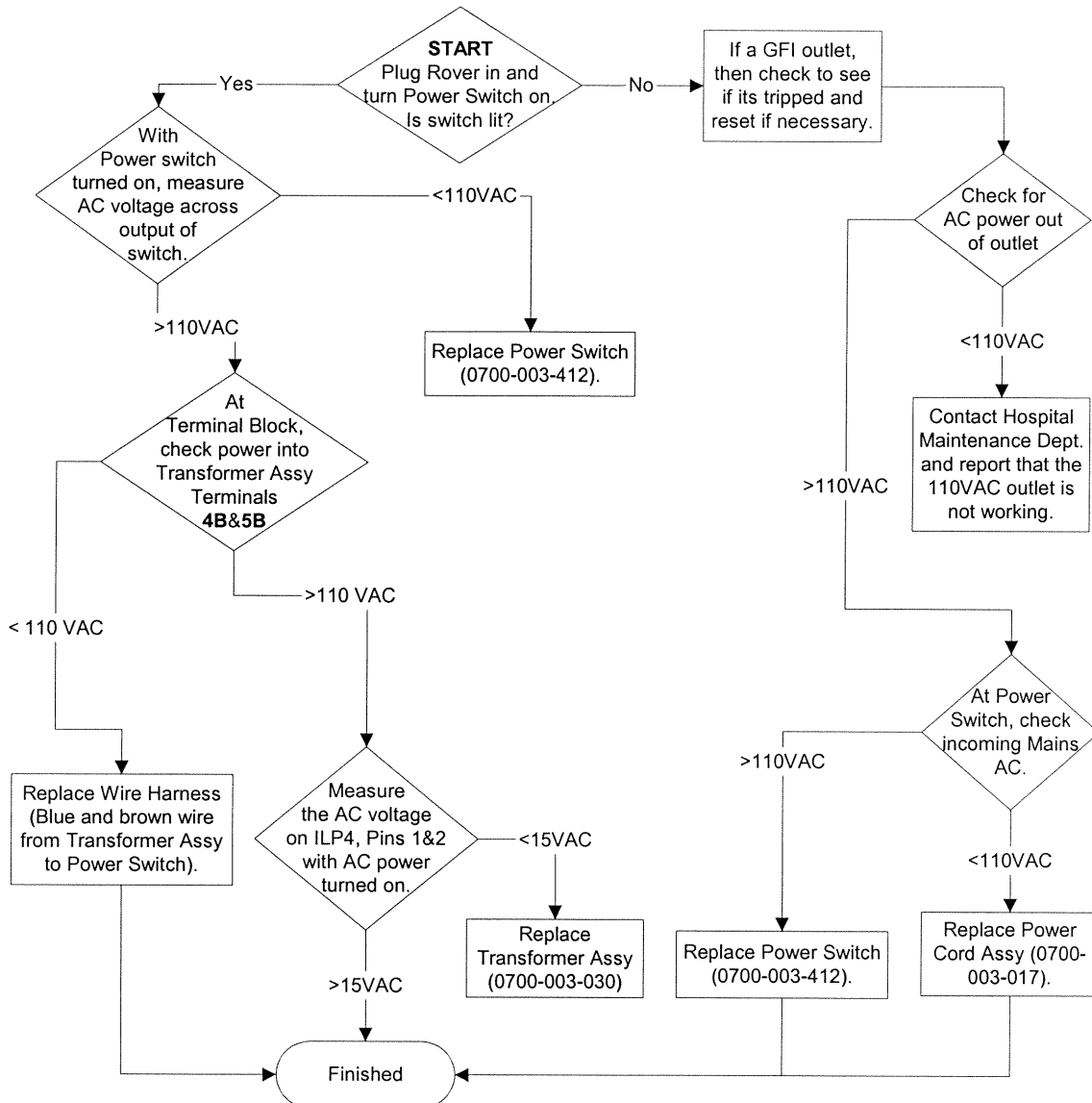
Service Bulletin Number _____

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin _____

0700-003-000 Rover Has No AC Power



Stryker Instruments Service Bulletin

Service Bulletin Number SB-0135

Rev Level NONE


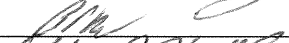
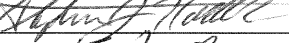
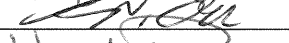

Routine Service Bulletin X

Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Approval	Name	Signature	Date
Originator	Rob Cooley		7/1/03
Quality	Al Beverage		7/15/03
Manufacturing	Steve Horvath		7/1/03
Senior Engineer	T. O'Keefe		7/1/03
Materials	H. Patrick		7/15/03

Title: Offload Error

Purpose: Neptune System Troubleshooting

Scope: All Neptune Rovers and Dockers

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Note: When Docking a Rover, 10 Liters of water should offload in 80 seconds.

Stryker Instruments Service Bulletin

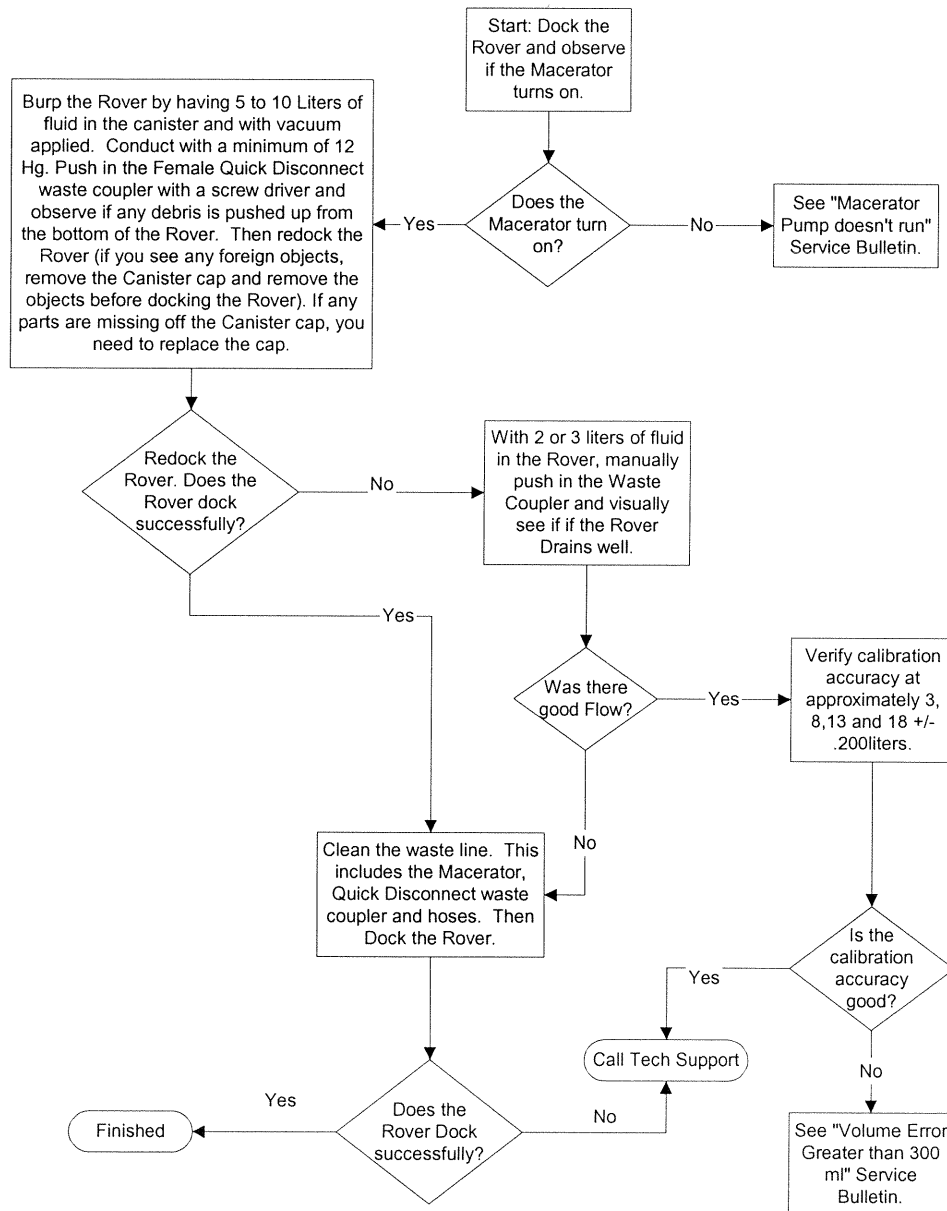
Service Bulletin Number _____

Rev Level __NONE__

Routine Service Bulletin __X__

Safety Service Bulletin _____

Offload Error Pressure Transducer Rover



Stryker Instruments Service Bulletin

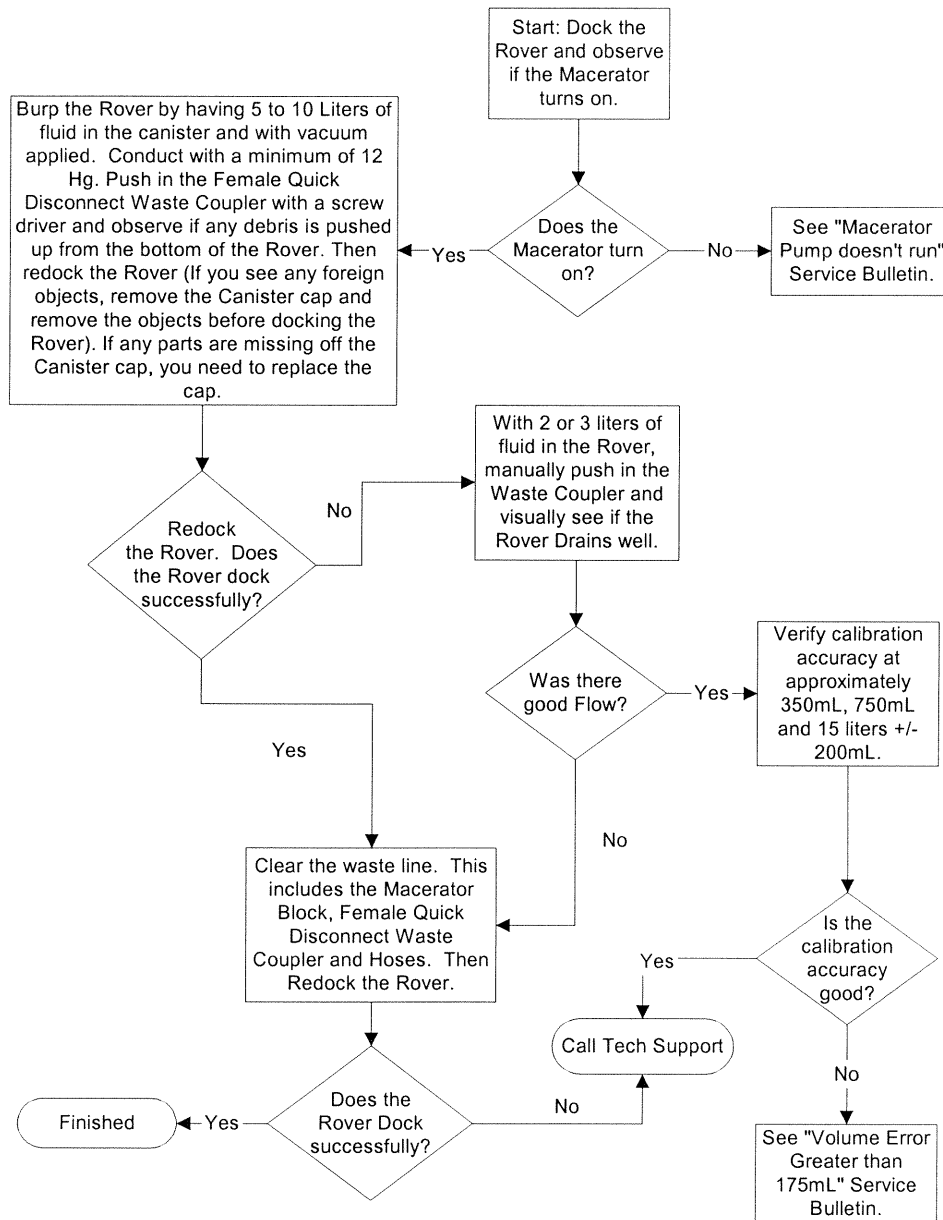
Service Bulletin Number _____

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin _____

Offload Error Level Sensor Rover



Stryker Instruments Service Bulletin

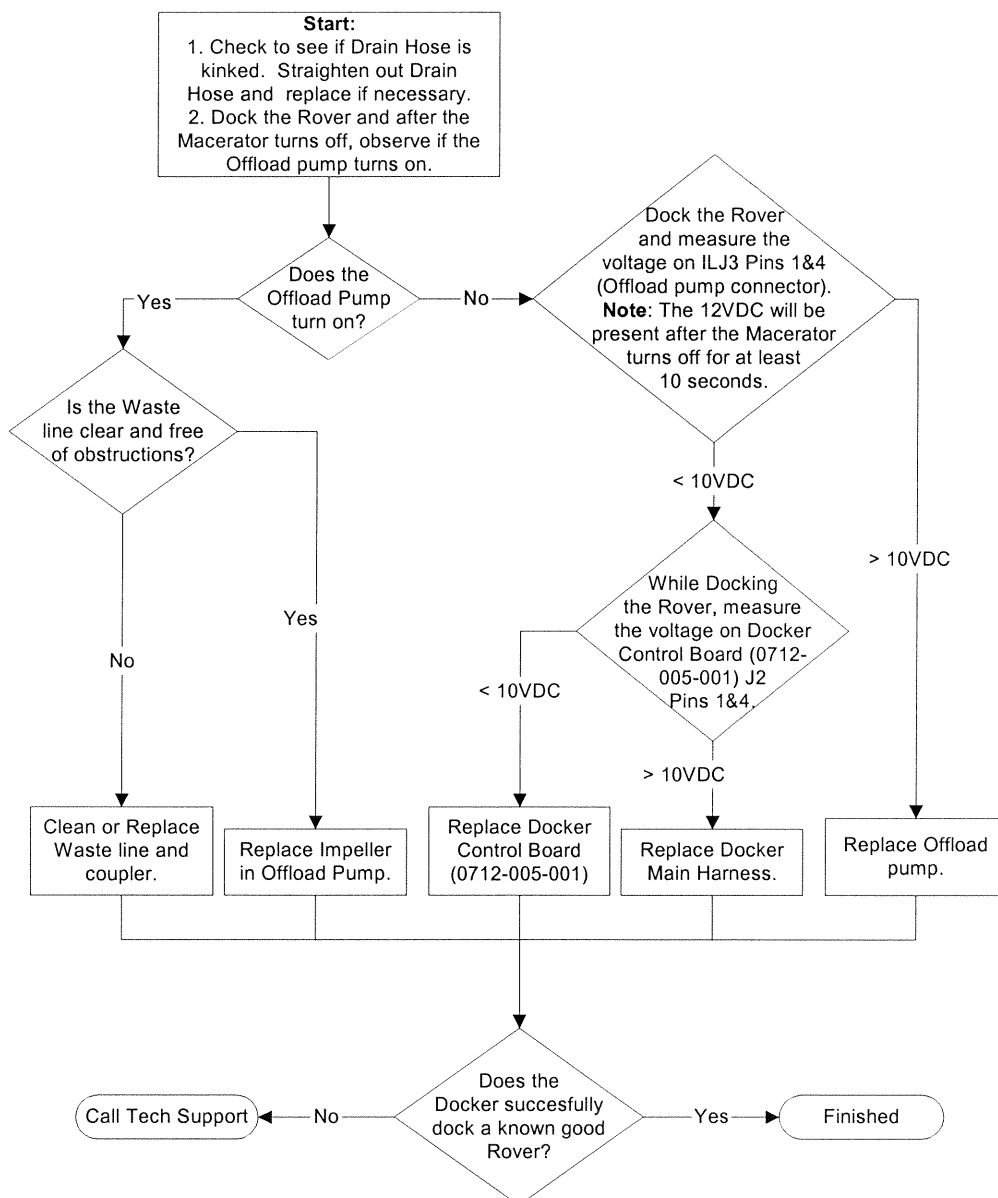
Service Bulletin Number _____

Rev Level__NONE_____

Routine Service Bulletin _X_

Safety Service Bulletin__

Offload Error Docker



Stryker Instruments Service Bulletin

Service Bulletin Number SB-0136

Rev Level NONE

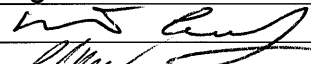
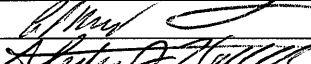
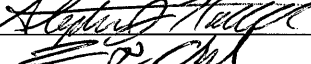


Routine Service Bulletin X

Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Approval	Name	Signature	Date
Originator	Rob Cooley		7/25/03
Quality	AL BEVERAGE		7/25/03
Manufacturing	Steve Horvath		7/25/03
Senior Engineer	T. O'Hara		8/3/03
Materials	H. Patrick		8/19/03

Title: Docker Magnet Does Not Turn On or Will Not Hold During Docking Sequence

Purpose: Neptune System Troubleshooting

Scope: 700-4, 700-5

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Note:

- Both sliding doors have to be open for the magnet to turn on.
- LED 13 (yellow LED) will go out when the left Docker Door is open. LED 12 (yellow LED) will go out when the right door is open. When both doors are open, LED's 13, 12 (yellow LED's) and 11 (green LED) will go out. If the sliding doors are being held open manually, the magnet will be activated for approximately 10 seconds. After 10 seconds have passed, the magnet will turn off again and LED 11 (green LED) will turn back on.

Stryker Instruments Service Bulletin

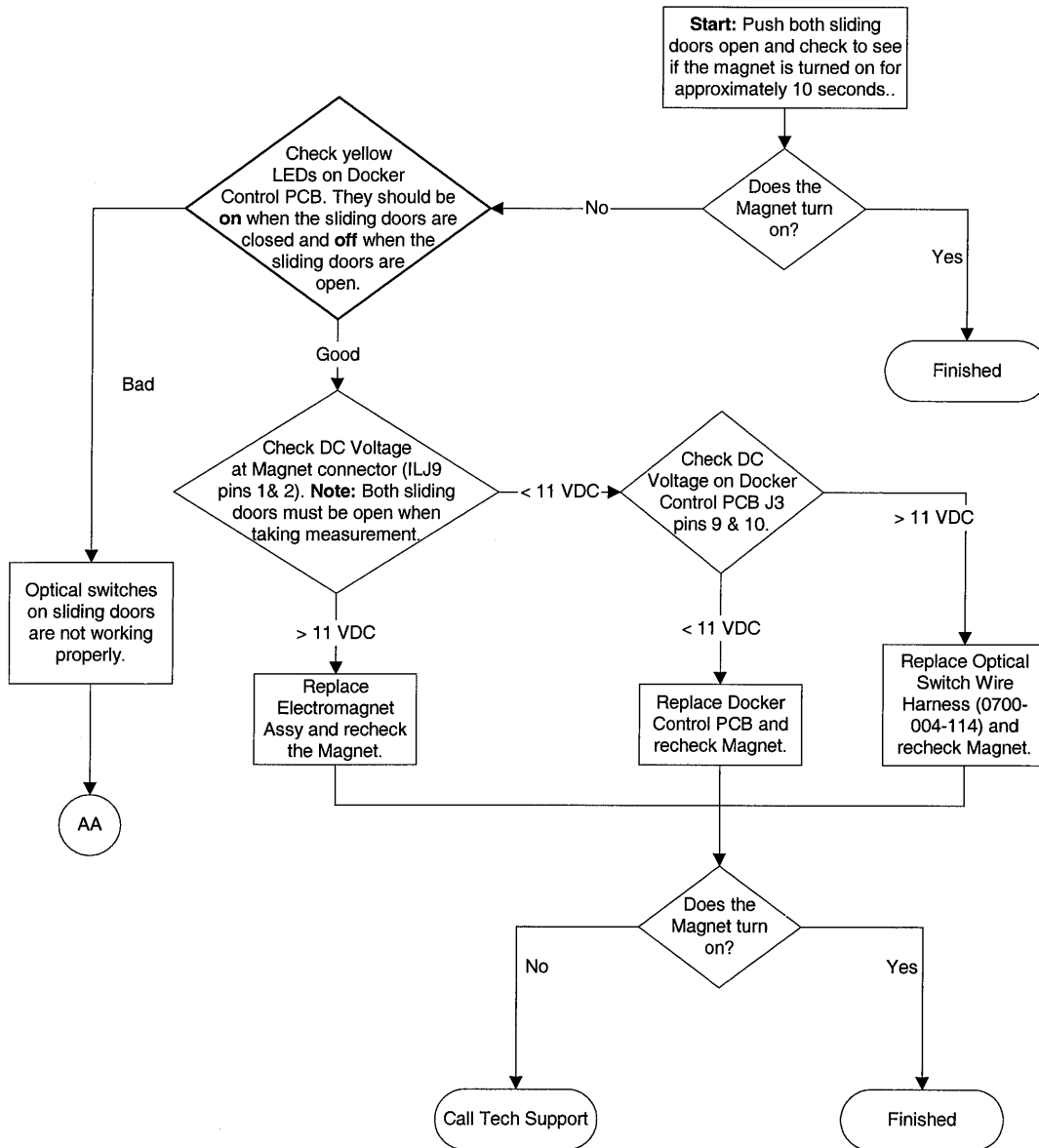
Service Bulletin Number SB-0136

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

Docker Magnet Does Not Turn On or Will Not Hold During Docking Sequence



Stryker Instruments Service Bulletin

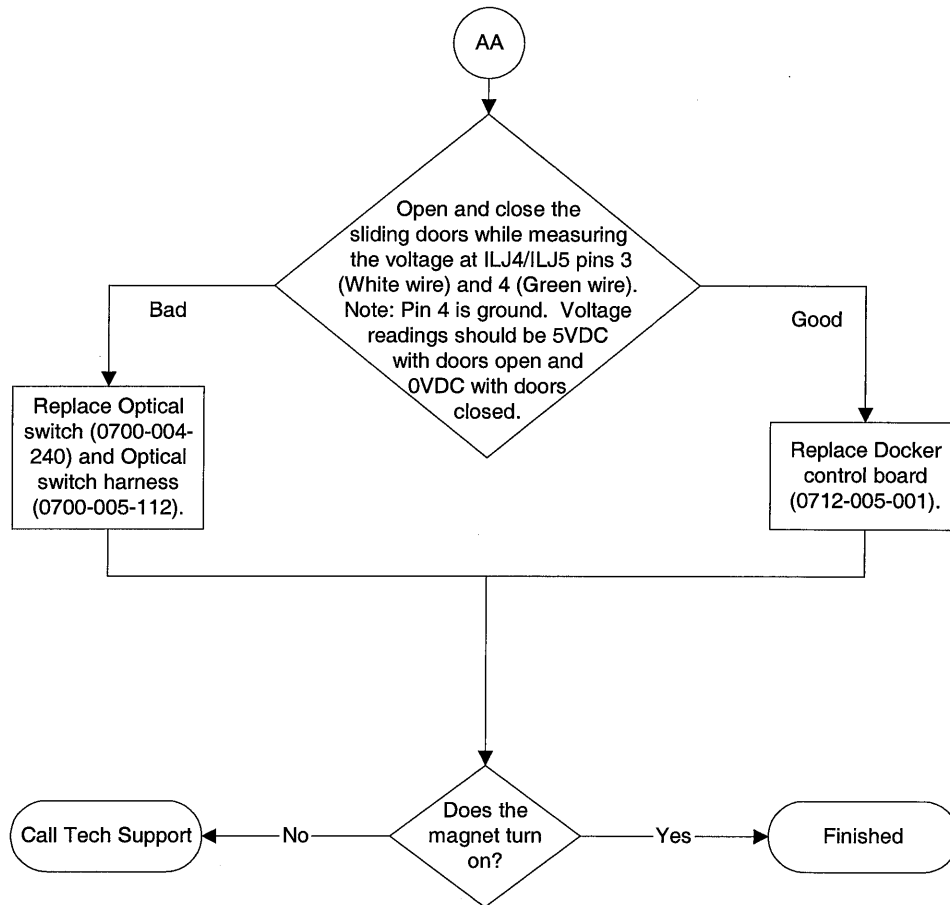
Service Bulletin Number SB-0136

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

Docker Magnet Does Not Turn On or Will Not Hold During Docking Sequence



Stryker Instruments Service Bulletin

Service Bulletin Number **SB-0140**

Rev Level **__NONE__**

Routine Service Bulletin **X**

Safety Service Bulletin **__**

Applicability:

Stryker Subsidiary **_____**

Stryker Field Service **X**

Stryker In House Service **_____**

Approval	Name	Signature	Date
Originator	Dan Desrosiers	S/D. Desrosiers	3-3-04
Quality	Todd Anderson	S/T. Anderson	3-4-04
Regulatory Affairs	Jen Mars	S/J. Mars	3-4-04
Manufacturing	Troy Durnell	S/T. Durnell	3-3-04
Senior Engineer	Tom O'Keefe	S/T. O'Keefe	3-5-04
Materials	Ryan Smith	S/R. Smith	3-3-04
Document Control	Shayla Reed	S/S. Reed	3-12-04

**Title: REMOVAL AND REPLACEMENT OF MACERATOR PUMP BLOCK/
TRANSDUCER BLOCK ASSEMBLY**

Purpose: Procedure outlining the steps necessary to perform the removal/replacement of the macerator pump block transducer block assembly.

Scope: **NEPTUNE Rover: 700-1 (level sensor transducer)**
NEPTUNE Rover: 700-3 (level sensor transducer w/o IV pole and w/o smoke evacuator)

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Details:

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0140

Rev Level NONE

Routine Service Bulletin X

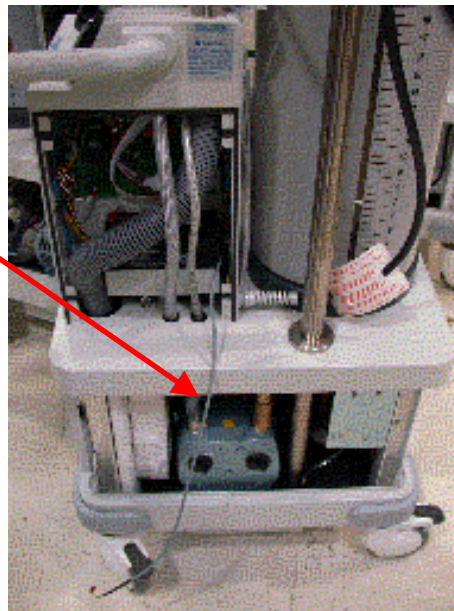
Safety Service Bulletin

NOTE: Ensure that the pre-fill (200ml) is removed from the unit before continuing.

1. Remove canister cap.
2. Remove UIP and disconnect connector from J8. (photo)



3. Remove battery door panel (1/8 hex key) and find level sensor cable and lay outside of tower assembly.



Stryker Instruments Service Bulletin

Service Bulletin Number **SB-0140**

Rev Level **__NONE__**

Routine Service Bulletin **X**

Safety Service Bulletin **__**

4. Remove chassis side panel assembly (5/32 hex key). Locate cable at chassis wiring harness from underneath chassis and pull cable to allow for slack to remove macerator pump block/transducer assembly.



5. Disconnect pneumatic tubing from pneumatic elbow fitting at base of IV Pole.
6. Remove pneumatics panel assembly (9/64 hex key).
7. Remove bolt from bottom of IV Pole and slide pole upward until you have access to the pneumatic elbow fitting. Taking care not to bend the post on the elbow, use a 7/16 open end wrench to remove the fitting and slide the IV Pole out.



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Service Bulletin Number **SB-0140**

Rev Level **__NONE__**

Routine Service Bulletin **X**

Safety Service Bulletin **__**

8. Remove the Water line/Female Quick Disconnect Coupling by removing the Retaining ring, coupling inner spacer and the wave spring and placing the line back behind Vacuum pump.
NOTE: Although the pre-fill (200ml) has been removed, there may be some fluid in the hose and the block itself.
9. Loosen the hose clamps on the waste-line coming from the Macerator Pump Block/Transducer Assembly to the Waste Coupler. Carefully remove the waste hose from the barbed fitting.
10. Remove the four bolts (3/16 hex key) from the Macerator Pump Block/Transducer Assembly and carefully lower and remove assembly from the chassis to the floor.
11. Use crescent wrench to remove the level sensor from the block.
NOTE: When replacing level sensor, be careful not bind cable when threading level sensor into block.
12. Re-tape (Teflon tape 1/2in) threads of level sensor and place into new transducer block(711-112-004Q).



NOTE: Ensure that O-Ring has been applied to Transducer Assembly before re-installation.

NOTE: Ensure that the float level sensor is placed on the level sensor and the o-ring is placed on the canister cap before re-installing cap.

13. Re-assemble in reverse order.

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0140

Rev Level NONE

Routine Service Bulletin X

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14. Verify the calibration by following the procedure found on page 17 of SB-0123(Rover and Docker Inspection Procedures). If calibration is not accurate, reference SB-0125(Rover Pressure Transducer/Level Sensor Calibration) to conduct calibration procedure.

Stryker Instruments Service Bulletin

Service Bulletin Number **SB-0141**

Rev Level **__NONE__**

Routine Service Bulletin **X**

Safety Service Bulletin **__**

Applicability:

Stryker Subsidiary **_____**

Stryker Field Service **X**

Stryker In House Service **_____**

Approval	Name	Signature	Date
Originator	Dan Desrosiers	S/D. Desrosiers	2-27-04
Quality	Todd Anderson	S/T. Anderson	3-2-04
Regulatory Affairs	Jen Mars	S/J. Mars	3-5-04
Manufacturing	Troy Durnell	S/T. Durnell	3-2-04
Senior Engineer	Tom O'Keefe	S/T. O'Keefe	3-5-04
Materials	Ryan Smith	S/R. Smith	3-3-04
Document Control	Shayla Reed	S/S. Reed	3-8-04

Title: Vacuum Relief Valve Replacement

Purpose: Procedure outlining the steps necessary to perform the removal/replacement of the vacuum relief valve.

Scope: NEPTUNE Rover: 700-1 (level sensor transducer)
NEPTUNE Rover: 700-3 (level sensor transducer w/o IV pole and w/o smoke evacuator)

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0141

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

Details:

1. Remove chassis side panel assembly (5/32 hex key) located below the battery compartment.
2. Loosen hose clamp on barbed fitting connected to pipe tee coming out of the vacuum pump and connecting to check valve.
3. Pull hose from barbed fitting carefully, ensure stress is not applied to check valve.
4. Remove vacuum relief valve from barbed fitting and elbow to allow assembly to turn without interference from the IV pole.



5. Remove barbed fitting from pipe tee, also to allow for turning without IV pole interference.



6. Remove assembly from vacuum pump.

Stryker Instruments Service Bulletin

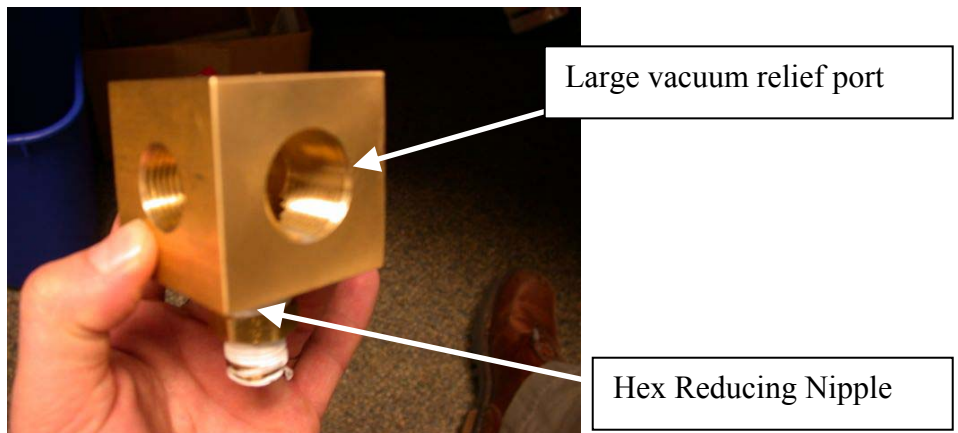
Service Bulletin Number **SB-0141**

Rev Level **NONE**

Routine Service Bulletin **X**

Safety Service Bulletin

7. Remove hex reducing nipple from pipe tee.
7. Teflon tape hex reducing nipple and thread into hole indicated below in three way elbow.



8. Using channel lock pliers, thread three way elbow into vacuum pump.



9. Thread assembly 90° short of completely tight, thread Teflon wrapped barbed fitting into three way elbow.
10. Thread vacuum relief valve(0700-001-131) into three way elbow.
11. Tighten assembly completely.
12. Feed hose back onto barbed fitting, and fasten hose clamp.

Stryker Instruments Service Bulletin

Service Bulletin Number **SB-0141**

Rev Level **NONE**

Routine Service Bulletin **X**

Safety Service Bulletin

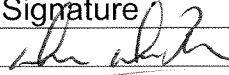
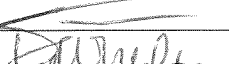
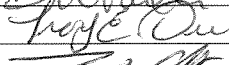
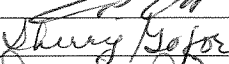

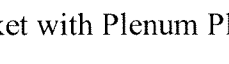
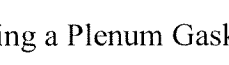
13. Turn vacuum pump on, adjust vacuum pressure controller to max vacuum.
14. Loosen the retaining nut on the vacuum relief valve, and adjust the vacuum pressure with the knurled fitting on the relief valve to a max of 19 in Hg as indicated by the gauge.
15. Tighten retaining nut.
16. Fasten side panel.
17. Ensure vacuum pump is running properly.

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0144Rev Level NONERoutine Service Bulletin XSafety Service Bulletin

Applicability:

Stryker Subsidiary Stryker Field Service XStryker In House Service

Approval	Name	Signature	Date
Originator	Don DesRosiers		5-6-04
Quality	Todd Anderson		5/7/04
Regulatory Affairs	Danielle Wheeler		5/7/04
Manufacturing	1204 DURNELL		7MAY04
Senior Engineer	T. O'Keefe		5/20/04
Materials	SHERY GOFORTH		5/7/04
Document Control	Jenni Novotny		5/11/04

Title: Replacement of the Plenum Gasket with Plenum Plate and gasket**Purpose:** Outline the procedure for replacing a Plenum Gasket on a Neptune Rover (700-1 or 700-3).

Scope: Neptune Rover (p/n 0700-001-000)
 Neptune Rover (without smoke mode or power pole; p/n 0700-003-000)

Distribution List: All Neptune System Service Providers**Documents requiring revision:** N/A**Details:**

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Reduced suction in a Neptune rover can result from a loss of vacuum when an air pathway exists between the Plenum Gasket and the Rover. Proper replacement of the Plenum Gasket with the latest repair kit will correct the loss of suction. In order to ensure the seal necessary to maintain vacuum, the gasket should be replaced using the following steps:

1. Remove the back panel of the Rover exposing the fluid suction HEPA Filter.
2. Remove the fluid suction HEPA Filter.
3. Remove the old Plenum Gasket.
4. If the original gasket was adhered with RTV or some similar Silicone product, it is only critical that the material is removed from the area under the new gasket. This material can be removed by hand or with a putty knife or similar tool. If the thin film of adhesive used in the more recent gaskets was used, it can be left on the plenum, as long as it is not thick enough to create a leak path behind the new gasket. Ensure that the surface under the new gasket is not excessively scratched during removal of the adhesive as this could also create a pathway resulting in loss of vacuum.
5. Remove the side panel on the rover.
6. The check valve connecting the vacuum pump and plenum is fastened with three screws, remove the (SHCS 6-32 X 7/16) screw on the bottom side of check valve. It is easiest to remove the screw with a long straight driver.

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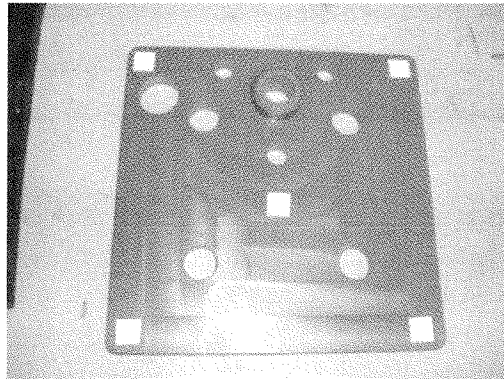
Service Bulletin Number SB-0144

Rev Level NONE

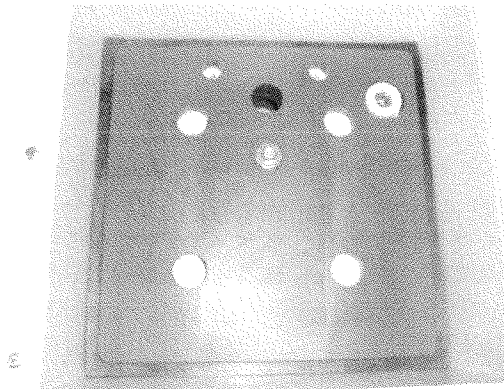
Routine Service Bulletin X

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7. Place the five adhesive sided foam pads in the corners and center of the plenum plate as shown in picture. These pads are only used to create a gap between the plenum and the plate and to assist while fastening with the screw, they are not used to secure the plate.



8. Take the plenum plate and insert the side with the boss first into the cavity with the boss aligned and inserted into the check valve opening.
9. Carefully place the gasket around the plate in the recess created by the plenum plate, ensure the gasket is not twisted and seated flat against the plenum, this will help align the plate prior to securing into place.
10. Replace the removed screw with a (SHCS 6-32 X 1) provided with the kit and place the lock washer followed by the flat washer under socket head. Insert through hole from the inside of the rover, slide large flat washer followed by the smaller flat washer onto stud and thread the lock nut onto stud to secure plenum plate.



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11. Tighten lock nut only until there is a slight deflection in the large flat washer. This plate will not be subject to much of a load and does not require much torque.
12. Replace the fluid suction HEPA filter and the back panel.
13. Verify suction is working properly, turn knob to increase suction to maximum level and ensure vacuum level reaches between 17-19 in. Hg.
14. If suction does not reach desired level, remove HEPA filter and ensure gasket is seated properly.
15. Fasten side panel back onto rover.

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Service Bulletin Number **SB-0145**

Rev Level **__NONE__**

Routine Service Bulletin **X**

Safety Service Bulletin **__**

Applicability:

Stryker Subsidiary **_____**

Stryker Field Service **X**

Stryker In House Service **_____**

Approval	Name	Signature	Date
Originator	Todd Anderson	S/T. Anderson	7/27/04
Quality	Todd Anderson	S/T. Anderson	7/27/04
Regulatory Affairs	Nicole Petty	S/N. Petty	7/30/04
Manufacturing	Naseer Syed	S/N. Syed	7/27/04
Senior Engineer	Rich DeVault	S/R. DeVault	7/30/04
Materials	Sherry GoForth	S/S. GoForth	7/27/04
Document Control	Jenni Novotny	S/J. Novotny	7/30/04

Title: Canister Cap/Manifold Seal

Purpose: Procedure outlining the steps necessary for the addition of a seal and seal retainer on the manifold port of the canister cap.

Scope: NEPTUNE Rover Bronze: 700-7 S/Ns 0408202193 to 0418301143

Distribution List: All NEPTUNE service providers

Documents requiring revision: 0700-007-170

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Details:

NOTE: Prior to performing procedure, ensure the Rover can sit idle for at least 12 hours following procedure, to enable adhesive to cure.

1. Look inside the manifold port and determine if the seal, which is captured between the cap and the flapper assembly, is present. If present, remove cap from the canister to remove seal, a dental pick or similar tool can be used without removing canister cap.
2. Open up the flapper and remove seal from port with needle nose pliers, as shown in Figure 1. below.



Figure 1.

3. Place cap back on canister.
4. Insert Seal (0700-007-182) into Seal Retainer (0700-007-181), as shown in Figure 2 below. Straighten and position the Seal by pushing the Seal Retainer onto the Canister Cap manifold port if necessary.

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Figure 2.

5. Clean outside surface of manifold port with alcohol.
6. Apply a bead of 3M Scotch-Weld DP-8005 adhesive to the outside of the manifold port. Apply adhesive near the top edge; ensure adhesive does not get on top surface of port, as shown in Figure 3.

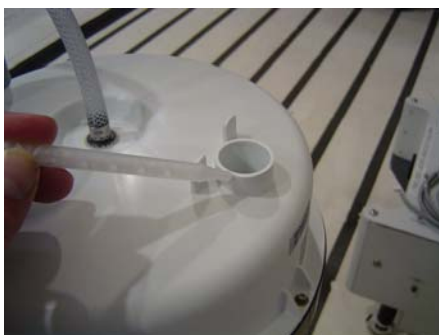


Figure 3.

7. Push the Seal Retainer onto the manifold port until it bottoms. Twist slightly to distribute adhesive evenly and wipe away excess from visible portions of the cap.
8. Allow Rover to sit idle for at least 12 hours to allow adhesive to cure.

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 0146 JAN 8-30-04
 Service Bulletin Number SB-0145
Rev Level NONERoutine Service Bulletin XSafety Service Bulletin

Applicability:

Stryker Subsidiary Stryker Field Service XStryker In House Service

Approval	Name	Signature	Date
Originator	Dan DesRochers	<i>[Signature]</i>	6/1/04
Quality	Todd Anderson	<i>[Signature]</i>	6/1/04
Regulatory Affairs	Jen Mars	<i>[Signature]</i>	6/3/04
Manufacturing	Naseer Syed	<i>[Signature]</i>	6/2/04
Senior Engineer	T. O'Keefe	<i>[Signature]</i>	6/3/04
Materials	Ron Centofanti	<i>[Signature]</i>	6/3/04
Document Control	Shayla Reed	<i>[Signature]</i>	6/17/04

JAN 9-1-04

9-1-04

Title: Canister Cap Support Ring replacement

Purpose: Provide a documented procedure for repairing Neptune Rover Canister's that have support ring leaks.

Scope: For all early model Neptune Rovers that had the aluminum style cap support ring.

Distribution List: All Neptune System service providers

Documents requiring revision: N/A

Details:

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1. Treat all components as contaminated medical waste
 - a. Wear personal protective equipment (PPE), including, gloves, eye goggles, surgical mask and covering over any open wounds.
2. Part numbers:
 - a. 0700-1-320: Canister Assembly
 - b. 0700-1-321: Canister
 - c. 0700-1-324: Cap Support Ring
 - d. 0700-1-325: Container Base
 - e. RTV-108
3. The original Neptune rovers had aluminum top rings that formed an "L" type joint with the canister.
4. This joint has come loose on occasion and can be identified by one of the following:
 - a. An air "Suction" or "Whistling" noise when the unit is under vacuum.
 - b. Water leaking from under the aluminum ring on the outside of the canister, this occurred during rinse portion of the docking cycle.
5. If it is noticed that this condition occurs then a field replacement with the new style cap support ring is possible using the following procedure.

Procedure:

1. Mark the canister such that aligning the canister screw holes (six) in the new cap support ring to match the radial location of the old canister support ring is possible.
 - a. This is so that the manifold will attach at the "12:00" position. (When viewing from the user interface panel). Having the holes misaligned will cause the canister cap to be off either clockwise or counter-clockwise.
2. Remove the cap from the cap support ring.
3. Remove the cap support ring from the canister. Score both sides of the support ring, score on the horizontal plane on the "inside" and on a vertical plane under the lip on the "outside" of the ring.
 - a. Perform this with great care. Using a razor knife (box cutter type) has proven effective, but the 6 in 1 Painters tool pictured below works very well. Working with slight prying and cutting has proven

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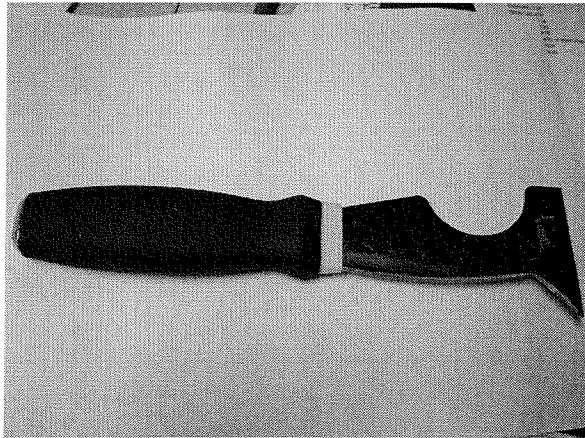
Service Bulletin Number SB-0145 ⁶ JLN 9/10/04

Rev Level NONE

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effective. Excessive prying could and has, caused the (acrylic) canister to crack. Any cracking of the (acrylic) canister renders the entire canister useless and at that point the entire canister assembly must be replaced. (Current assembly part number is 700-1-320)



- b. Slowly, starting in the area of the current leak (between ring and canister) work the knife between the ring and container.
 - c. Working the knife to "Cut" the glue, work the entire diameter, again, working from the inside.
 - d. With a combination of cutting and gentle prying the aluminum ring should come off.
4. Once the old aluminum ring is off, clean the canister.
 - a. Carefully scrape off all loose glue.
 - b. Thoroughly clean the top two inches of the canister, inside and out, include the top of the acrylic canister.
 - i. Use a fine grade of sandpaper to help remove old glue
 - ii. Use isopropyl alcohol to clean the area prior to installation of new cap support ring.
5. Prepare the new cap support ring.
 - a. Turn the cap support ring upside down; notice that there is a "U" channel that will form a "U" joint with the canister when the two are joined.
 - b. Clean the "U" channel and wipe with isopropyl alcohol to clean and remove any oils.

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9/10/06

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- c. Using RTV-108, fill the "U" channel with RTV
 - i. Only fill the channel half way from bottom of channel to top of channel. It is better to overfill than under fill.
 - ii. The entire circumference of the "U" channel must be filled
- 6. Attach the new cap support ring:
 - a. Aligning the cap screw holes with previously made marks, place cap support ring down onto the canister.
 - b. Place about 50 lbs of force down on the cap support ring.
 - c. Rotate the ring about 90° clockwise and then back to original position.
 - d. Clean any RTV that has escaped from the groove during application from beneath ring on both sides of canister to give a professional appearance.
- 7. Let sit for 30 minutes and then gently attach cap and hoses.
- 8. Place note on unit (such that it can not be missed) that the unit shall not be used for 24 hours from time cap support ring was placed on canister.
- 9. Verbally confirm with the account they are aware that the unit must sit idle for 24 hours.

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0171Rev Level NONERoutine Service Bulletin XSafety Service Bulletin

Applicability:

Stryker Subsidiary Stryker Field Service X

Approval	Name	Signature	Date
Originator	ROL COOLEY	<i>[Signature]</i>	1/28/03
Quality	STEVE HORVATH	<i>[Signature]</i>	1/28/03
Manufacturing	AL BEVERAGE	<i>[Signature]</i>	1/28/03
Senior Engineer	T. O'KEEFE	<i>[Signature]</i>	1/28/03
Materials	J. Smith	<i>[Signature]</i>	1/29/03

Title: IV Pole Will Not Drop

Purpose: Neptune System Troubleshooting

Scope: 700-1 Rovers (Pressure Transducer and Level Sensor)

Distribution List: All NEPTUNE service providers

Documents requiring revision: N/A

Stryker Instruments Service Bulletin

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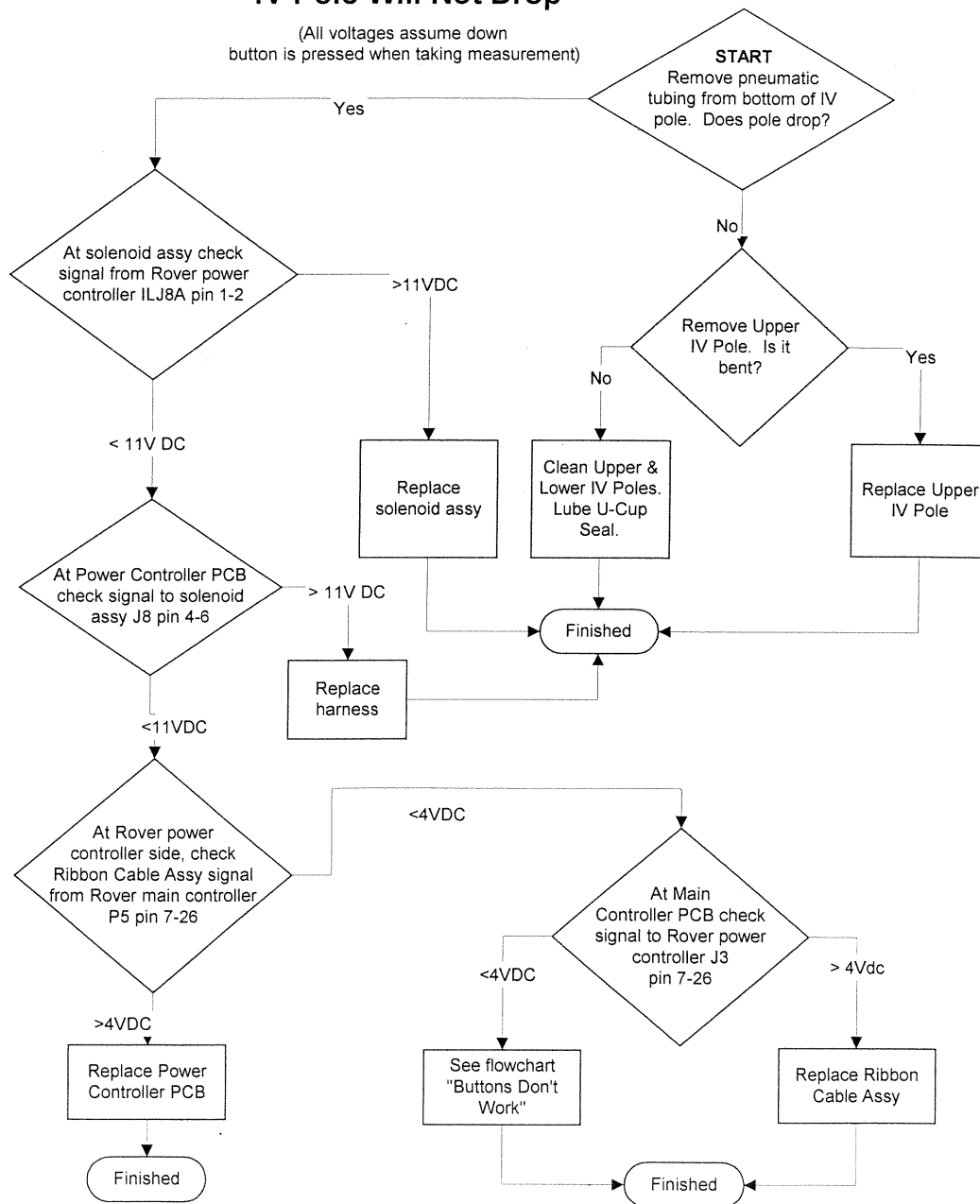
Rev Level NONE

Routine Service Bulletin X

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IV Pole Will Not Drop

(All voltages assume down button is pressed when taking measurement)



Stryker Instruments Service Bulletin

Service Bulletin Number SB-0175

Rev Level None




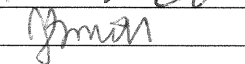

Routine Service Bulletin X

Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Approval	Name	Signature	Date
Originator	Todd Anderson		2/26/03
Quality	Todd Anderson		2/26/03
Manufacturing	KEPPY / AKE		2/26/03
Senior Engineer	T.O. Kepp		2/27/03
Materials	Jill Smith		2/26/03

Title: Neptune Rover Power Pole PM

Purpose: To ensure the proper operation of the Neptune Rover Power Pole.

Scope: Applicable to all serial numbers of Neptune Rovers with the Power Pole, part number: 700-1

Distribution List:

Stryker Instruments Neptune Field Service Representatives

Documents requiring revision: 0700-001-060, Power Pole Assembly

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Rev Level None

Routine Service Bulletin X

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Details:

Due to a combination of normal wear and tear and customer misuse, there is the potential that the Power Pole of the Neptune Rover may become bent and/or may not function properly. Stryker Instruments asks that when a Service Tech is visiting an account he or she inspects all 700-1 Neptune Rovers for normal Power Pole operation.

Inspect as follows:

1. Find an area with sufficient ceiling height and power up the unit.
2. Inspect the brass bushing on the lower pole. Ensure it is securely in place and retained by setscrews.
3. Raise the Power Pole using the up arrow on the User Interface Panel until it stops. Ensure the Power Pole is able to maintain this extended position. If the Power Pole will not extend or fails to stay extended, follow the troubleshooting guide in Section 5A of the Neptune Waste Management System Service Manual.
4. Measure the height of the upper pole from the top of the IV Pole Hook to the top of the brass bushing on the lower pole. If this height is not approximately 38", the pole may be bent or jammed.
5. Rotate the upper pole. If any wobble at the top of the upper pole is observed, the pole may be bent.
6. If the pole is suspected to be bent or otherwise malfunctioning, the Service Tech is to notify the appropriate persons within the account (usually the biomedical group) to tag the unit(s) in question per normal hospital procedures to identify the problem. The Service Tech is also to initiate a service call through Stryker Instruments to replace the Power Pole Assembly (part number 0700-001-060).

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Service Bulletin Number SB-0192 Rev Level: NONE

Routine Service Bulletin X Safety Service Bulletin

Applicability: Neptune 700-1 Rovers with fluid suction pump wired to secondary of isolation transformer.

Stryker Subsidiary

Stryker Field Service X

Stryker In House Service

Approval	Name	Signature	Date
Originator	Mike Irvine	S/M. Irvine	11/04/04
Quality	Todd Anderson	S/T. Anderson	6/22/04
Regulatory Affairs	Jen Mars	S/J. Mars	6/22/04
Manufacturing	Troy Durnell	S/T. Durnell	6/22/04
Senior Engineer	Tom O'Keefe	S/T. O'Keefe	10/04/04
Materials	Ronnie Ryan	S/R. Ryan	6/22/04
Document Control	Jessica Thomson	S/J. Thomson	10/12/04

Title: Rewiring the vacuum pump of a 700-1 Rover.

Purpose: To detail the steps necessary in order to rewire the Neptune 700-1 Rover vacuum pump. The vacuum pump originally gets power from the secondary of the isolation transformer. Under high temperature conditions, the thermal fuses within the transformer can trip. As a result, the power switch on the unit remains illuminated, but the rover enters "Waiting to Dock" mode, and the fluid suction pump turns off. This service bulletin describes how to rewire the vacuum pump so that it is powered directly from the power switch, and not from the isolation transformer.

Scope: 700-1 Rovers in which the vacuum pump is run off the secondary of the isolation transformer. These Rovers can be identified by a short white wire that connects K2 pin 2 to K1-2.

Distribution List:

Stryker Instruments Service Bulletin

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Rev Level: NONE

Routine Service Bulletin X

Safety Service Bulletin

Documents requiring revision: NONE

Details:

1. The following are required in order to perform this procedure:
 - a. A copy of Service Bulletin SB-123. Contact Stryker Instruments Service for current revision of this document. This document lists the testing procedures required after the procedure is complete. Required tests include (but are not limited to) earth leakage, patient leakage, and hi-pot tests. **DO NOT ATTEMPT THIS PROCEDURE UNLESS YOU ARE FAMILIAR WITH AND POSSESS ALL NECESSARY EQUIPMENT TO PERFORM ALL REQUIRED TESTING!**
 - b. Pump Relay Harness (Stryker Instruments P/N 0700-001-245).
 - c. Stainless Steel 6-32 x 1/4 Pan Head Screw (Stryker Instruments P/N 0050-038-000)
 - d. Refer to the wiring diagrams at the end of this document for connection information both before and after the wiring change. Contact Stryker Instruments Service if there are ANY questions about this procedure.
2. Make sure the Rover is unplugged, with the Power Switch in the OFF position. Remove the lower left panel from the Rover in order to gain access to the transformer and terminal

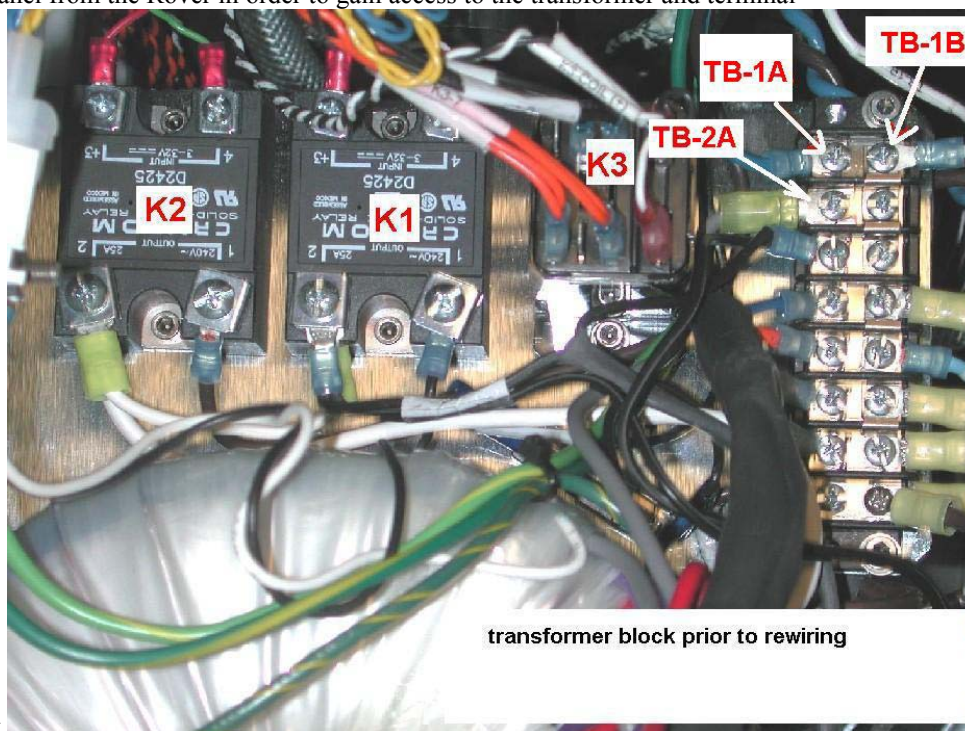


Figure 1: The transformer and terminal block prior to rewiring.

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3. Remove screws from terminal block positions 1B and 2B.
4. Remove jumper from terminal block positions 1B and 2B.

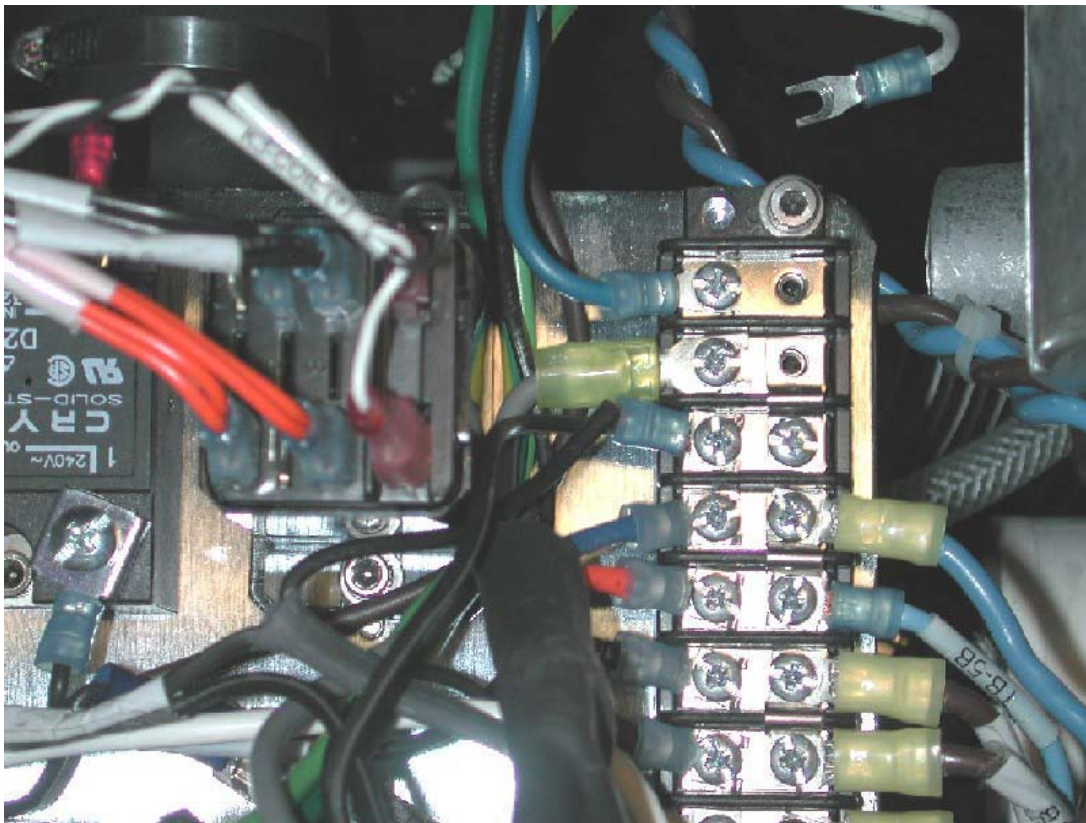


Figure 2: After Step 4

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5. Replace the white wire from the smoke blower (labeled TB-1B) into terminal block position 1B. Secure with screw.
6. Loosen screws from terminal block positions 1A and 2A.
7. Place the gray wire from the transformer into terminal block position 1A. Secure with screw.
8. Place the blue wire from the vacuum pump into terminal block position 2A. Secure with screw.

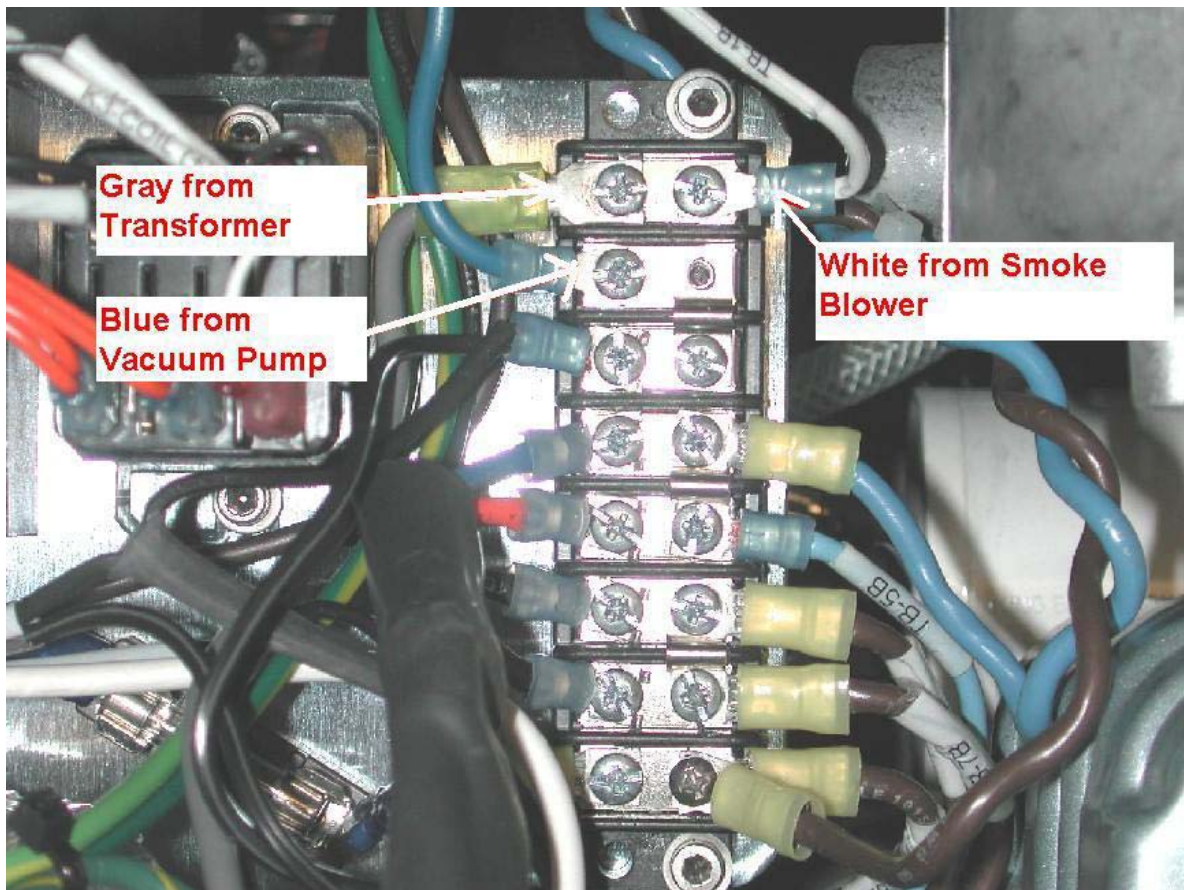


Figure 3: After Step 8

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9. Loosen the screw on terminal block position 3A. Remove the cooling fan terminal (this terminal has 2 black wires going into 1 terminal) from terminal block position 3A.
10. Loosen the screw on K1 pin 2, and remove the other cooling fan terminal.

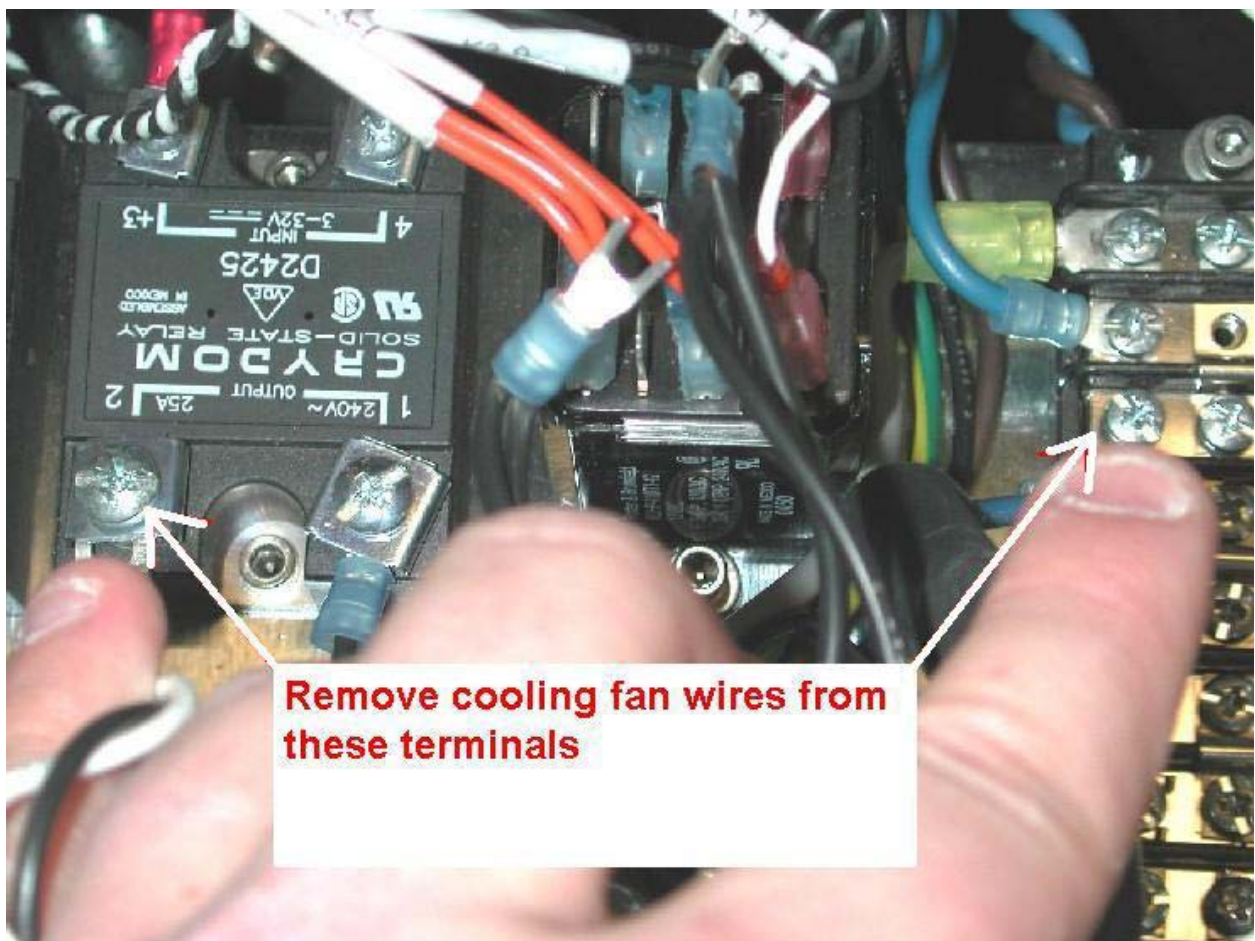


Figure 4: After Step 10

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11. Loosen the screw on K2 pin 2, and remove both the white wire from the transformer, and the short white jumper wire. Remove the short white jumper wire from K1 pin 2 as well. The short white jumper may be disposed of.
12. Secure the white wire from the transformer to K1 pin 2.

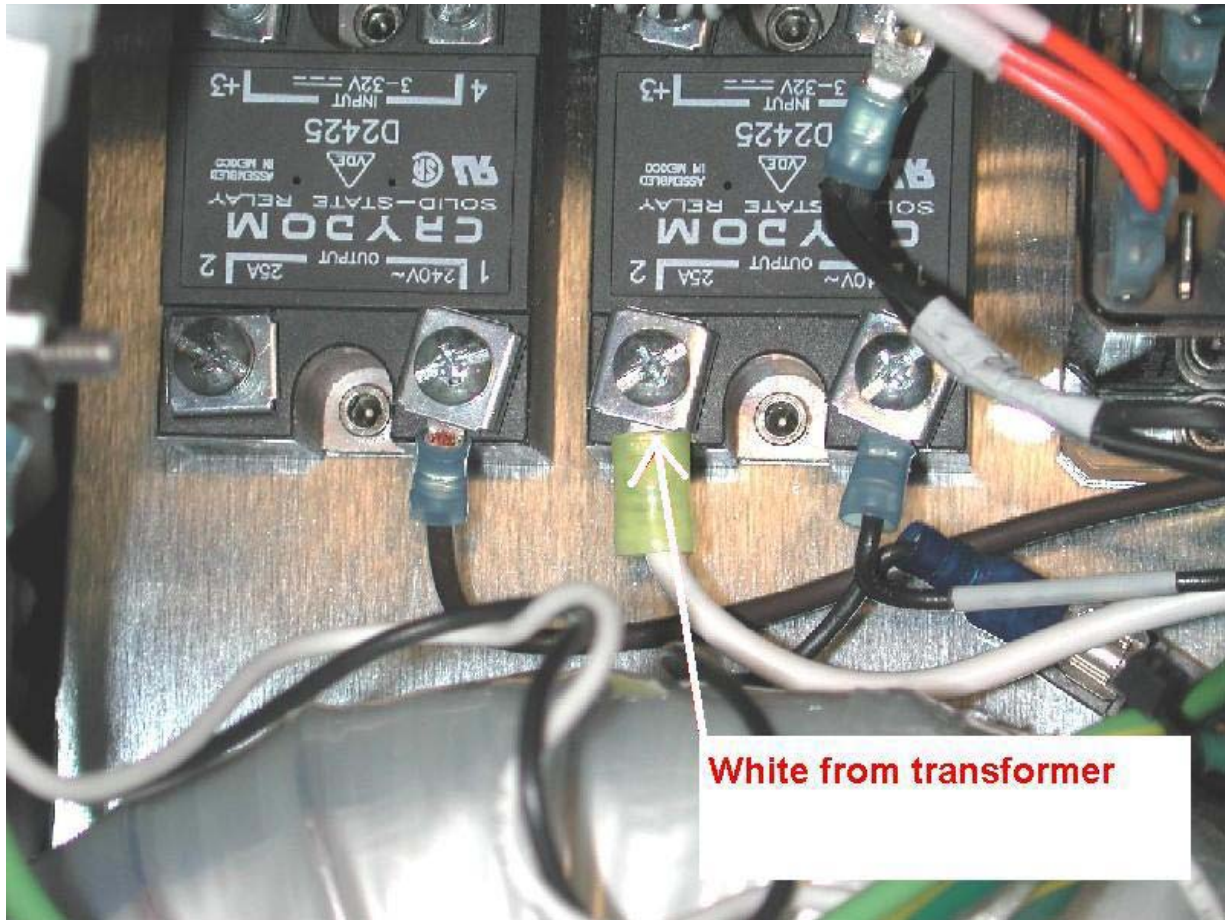


Figure 5: After Step 12

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Rev Level: NONE

Routine Service Bulletin X

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13. Place the cooling fan harness terminal (the one that is labeled K1-2) into terminal block position 2B. Secure with screw.

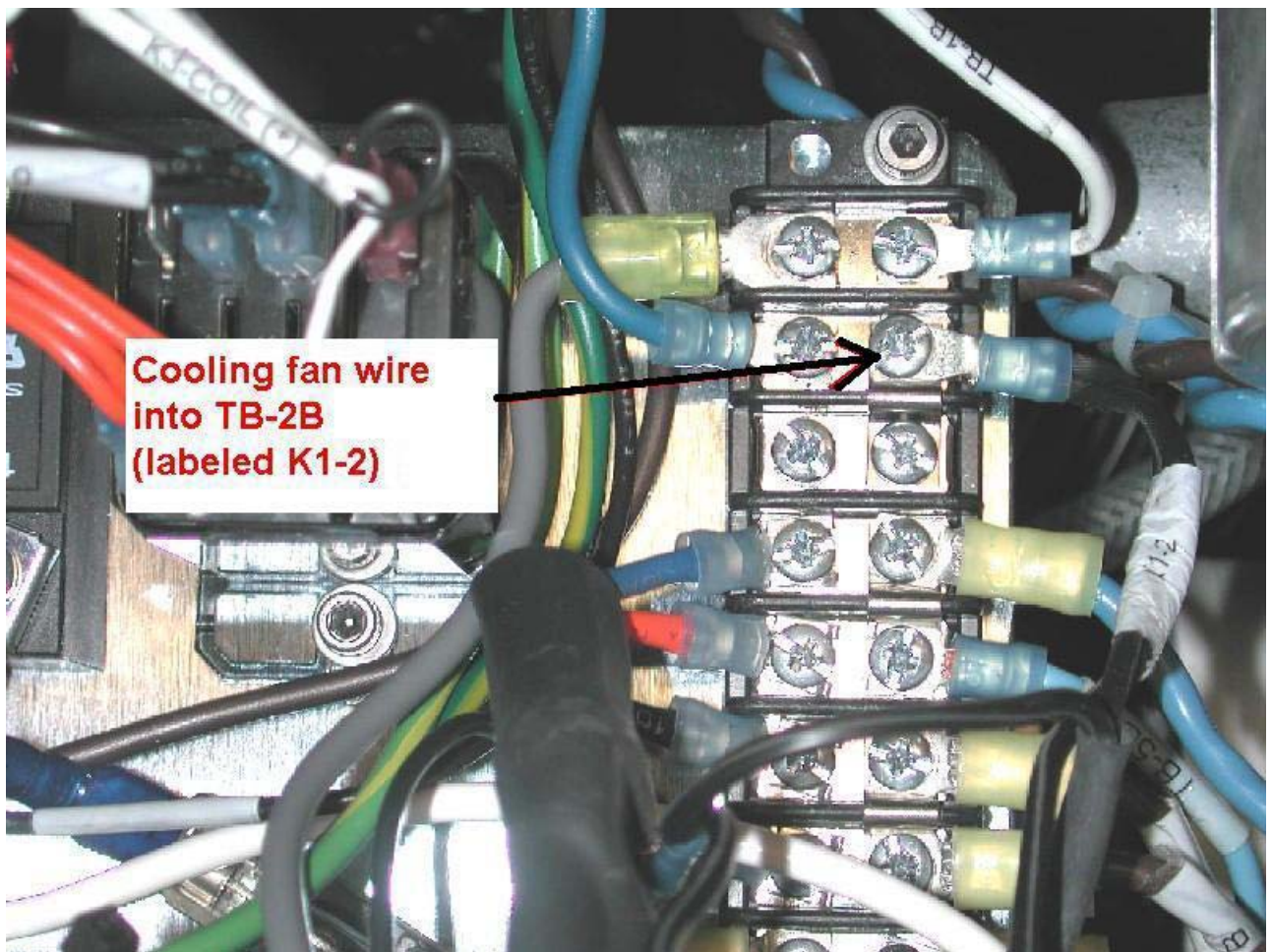


Figure 6: After Step 13

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Rev Level: NONE

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14. Remove the screw from terminal block position 3B.
15. Loosen the screw from terminal block position 4A, and remove the blue wire from the transformer. Place the blue wire from the transformer into terminal block position 3A. Secure with screw.
16. Loosen the screw from terminal block position 5A, and remove the orange wire from the transformer. Place the orange wire from the transformer into terminal block position 4A. Secure with screw.

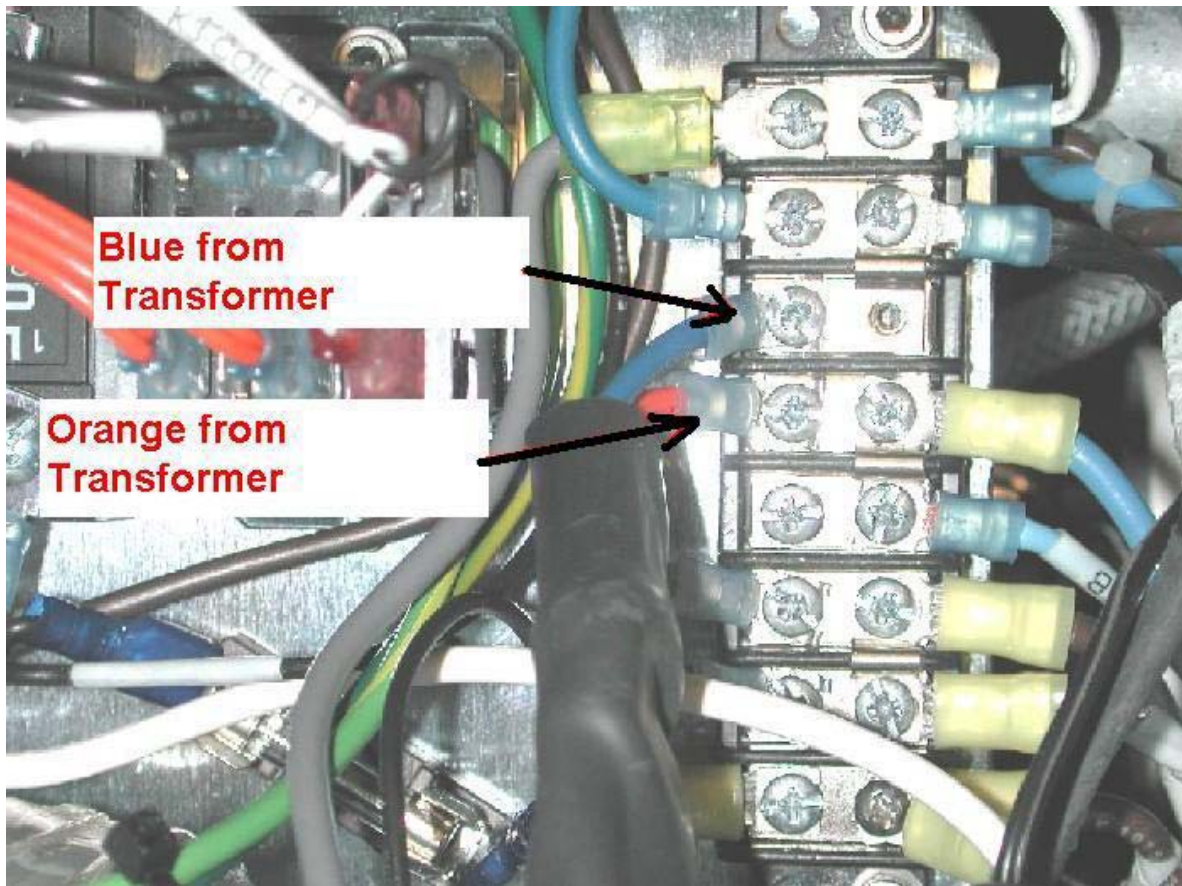


Figure 7: After Step 16

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Rev Level: NONE

Routine Service Bulletin X

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17. Loosen the screw from terminal block position 6A, and remove the black wire from the transformer. Place the black wire from the transformer into terminal block position 5A. Secure with screw.
18. Loosen the screw from terminal block position 7A, and remove the brown wire from the transformer. Place the brown wire from the transformer into terminal block position 6A. Secure with screw.



Figure 8: After Step 18

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19. Place one end of the brown jumper wire into terminal block position 7A, and the other end into K2 pin 2. Secure both screws. The end labeled K2-2 should go to K2-2, and the end labeled TB-7A should go to terminal block position 7A.

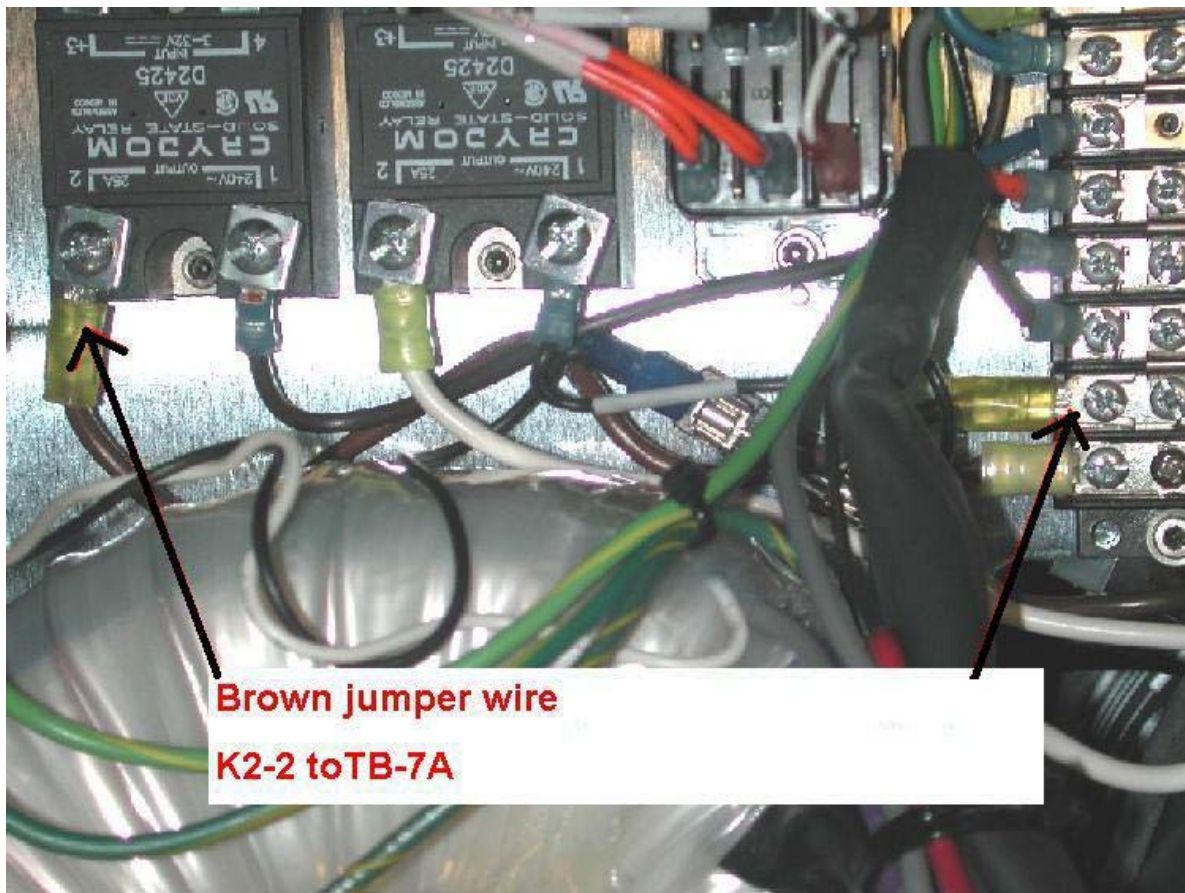


Figure 9: After Step 19

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20. Remove the screw from terminal block position 4B.
21. Remove the screw from terminal block position 5B. Remove the blue wire from terminal block 5B. Remove the jumper terminal from terminal block positions 4B to 5B.

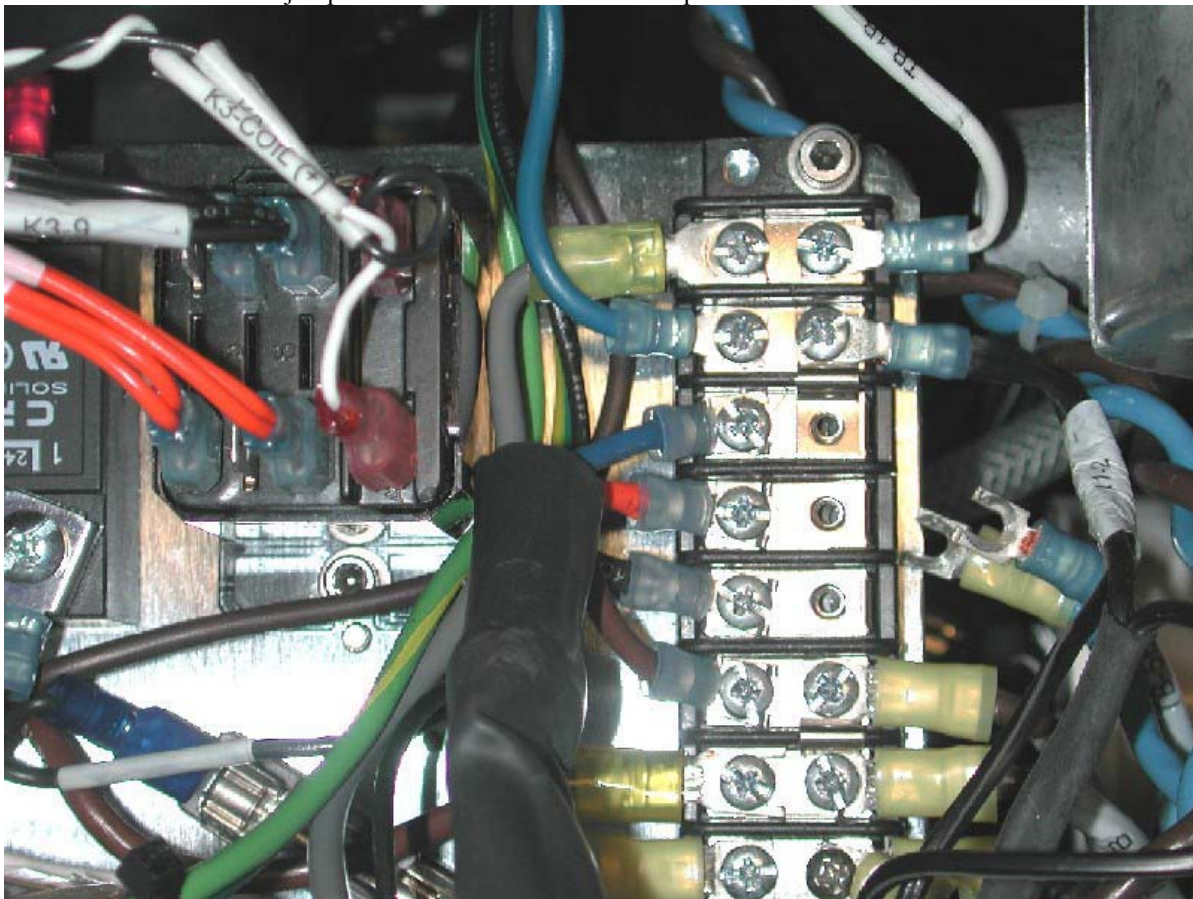


Figure 10: After Step 21

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Rev Level: NONE

Routine Service Bulletin X

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22. Place jumper terminal from terminal block positions 3B to 4B. Insert screws into terminal block positions 3B and 4B.
23. Place the blue wire from the power switch into terminal block position 3B. Secure with screw.
24. Insert blue wire from K4 pin A (labeled TB-5B) into terminal block position 4B. Secure with screw.

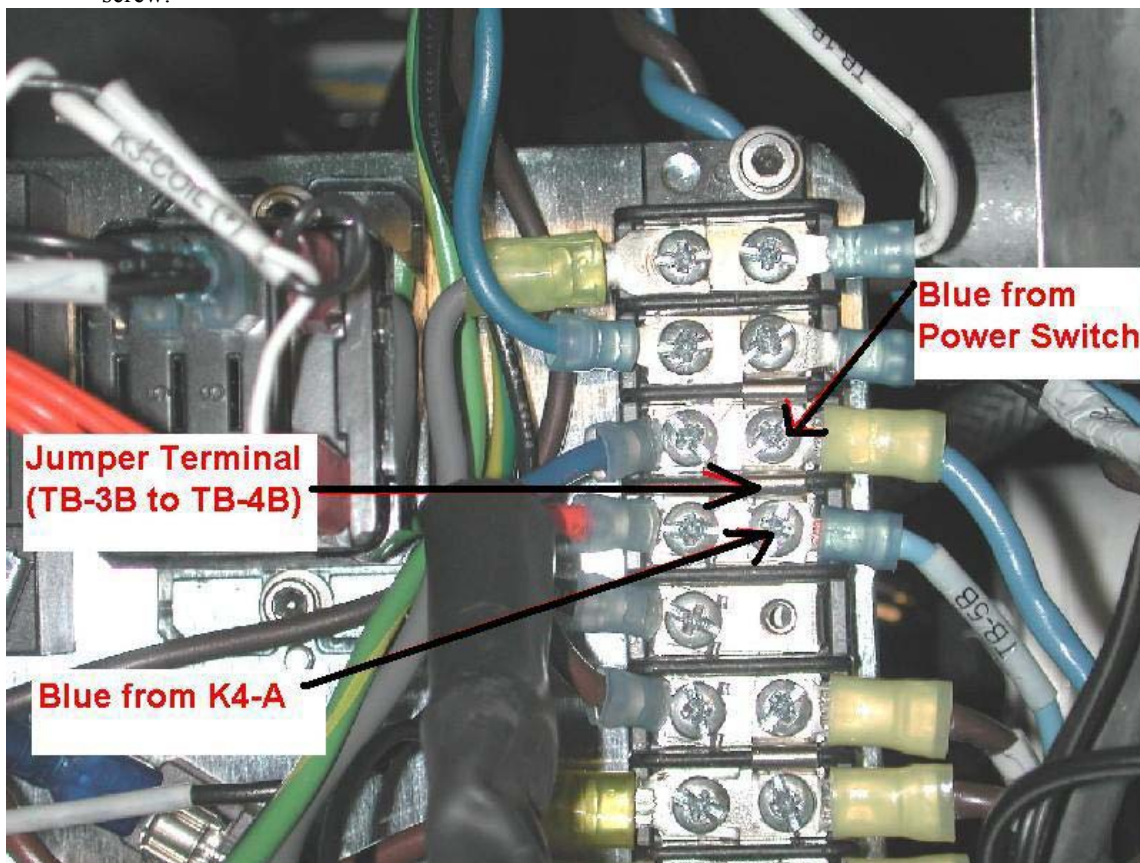


Figure 11: After Step 24

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Service Bulletin Number SB-0192

Rev Level: NONE

Routine Service Bulletin X

Safety Service Bulletin

25. Remove the screws from terminal block positions 6B and 7B.
26. Remove the jumper terminal from terminal block positions 6B to 7B.
27. Place the jumper terminal from terminal block positions 5B to 6B. Insert screws into terminal block positions 5B and 6B, but do not tighten them. Use a stainless steel screw for terminal block position TB-5B.

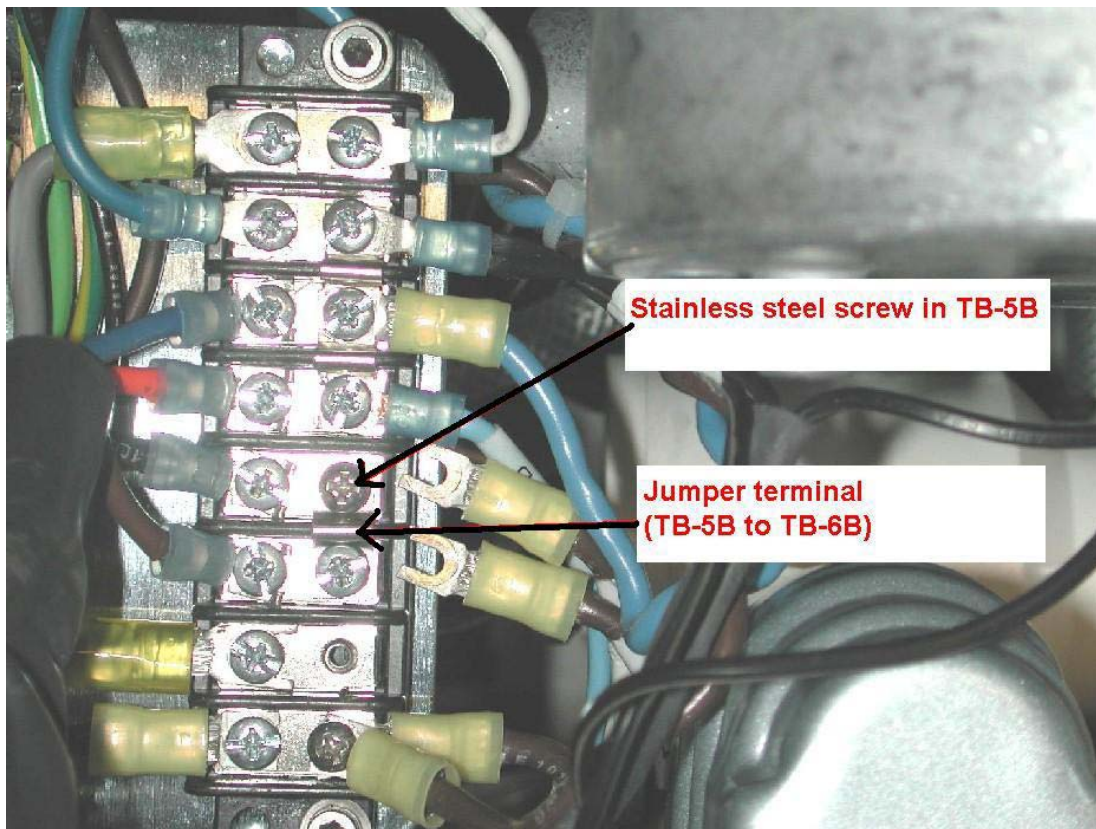


Figure 12: After Step 27

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Rev Level: NONE

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28. Place the brown wire from K4 pin 5 (labeled TB-6B) and the cooling fan terminal (2 black wires, the one that is NOT labeled K1-2) into terminal block position 5B. Secure with a stainless steel screw.
29. Place the brown wire from the inrush limiters (labeled TB-7B) into terminal block position 6B. Secure with screw.

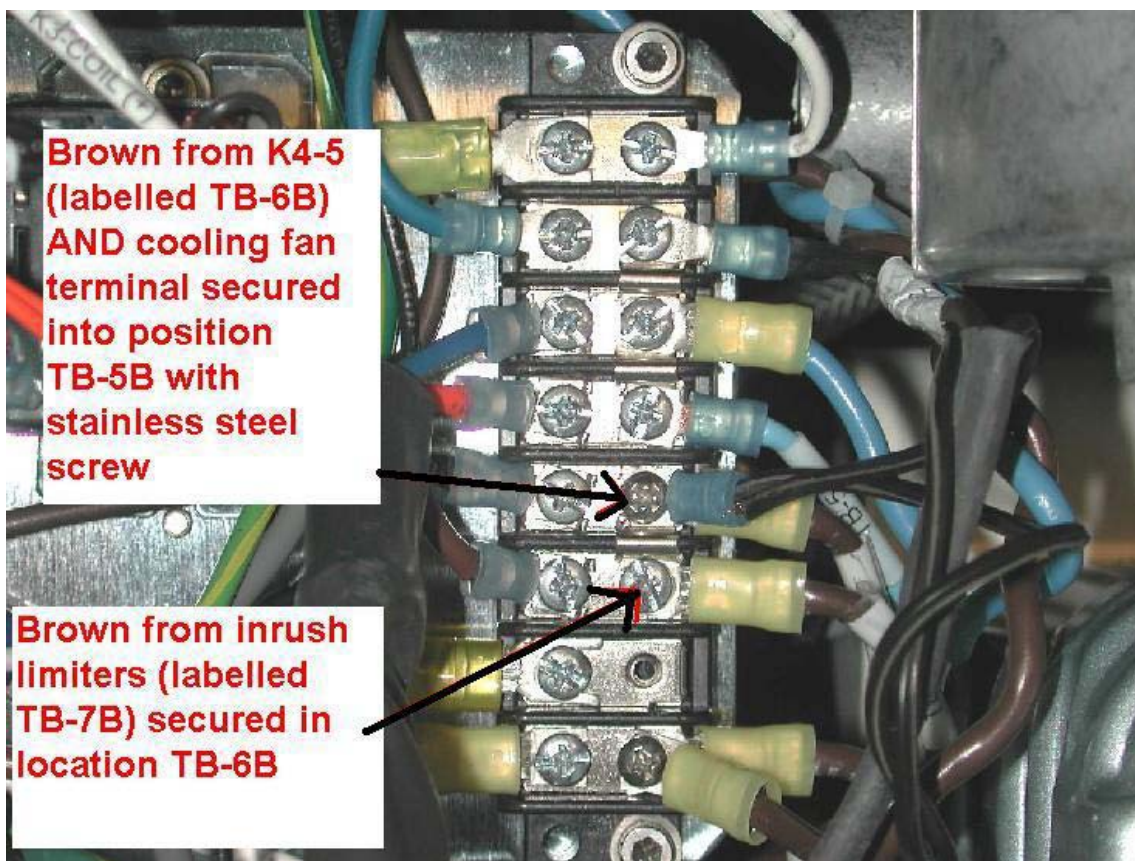


Figure 13: After Step 29

Stryker Instruments Service Bulletin

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Rev Level: NONE

Routine Service Bulletin X

Safety Service Bulletin

30. Remove the screw from terminal block position 8B. Place a jumper terminal from terminal block positions 7B to 8B. Insert screws into terminal block positions 7B and 8B, but do not tighten.
31. Place the brown wire from K4 pin 7 (labeled TB-8B) into terminal block position 7B. Secure with screw.
32. Place the brown wire from the power switch into terminal block position 8B. Secure with screw.

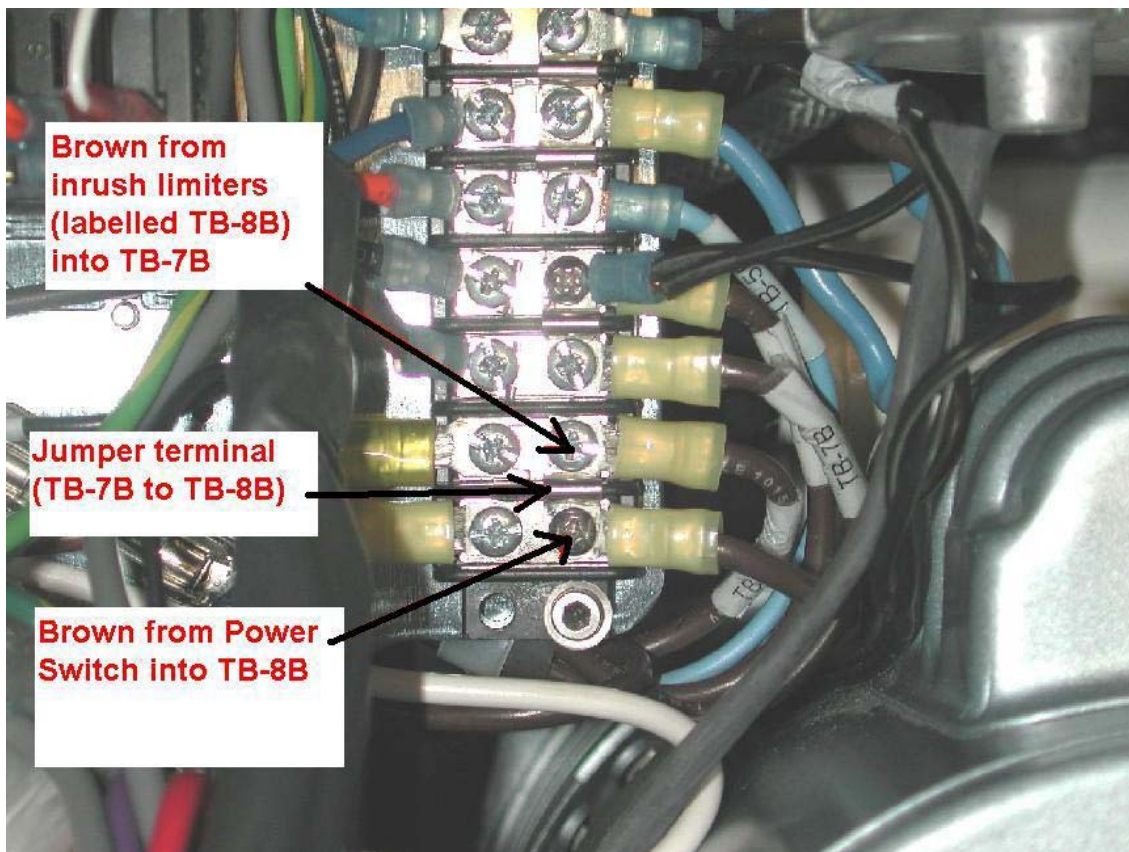


Figure 14: After Step 32

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Service Bulletin Number SB-0192

Rev Level: NONE

Routine Service Bulletin X

Safety Service Bulletin

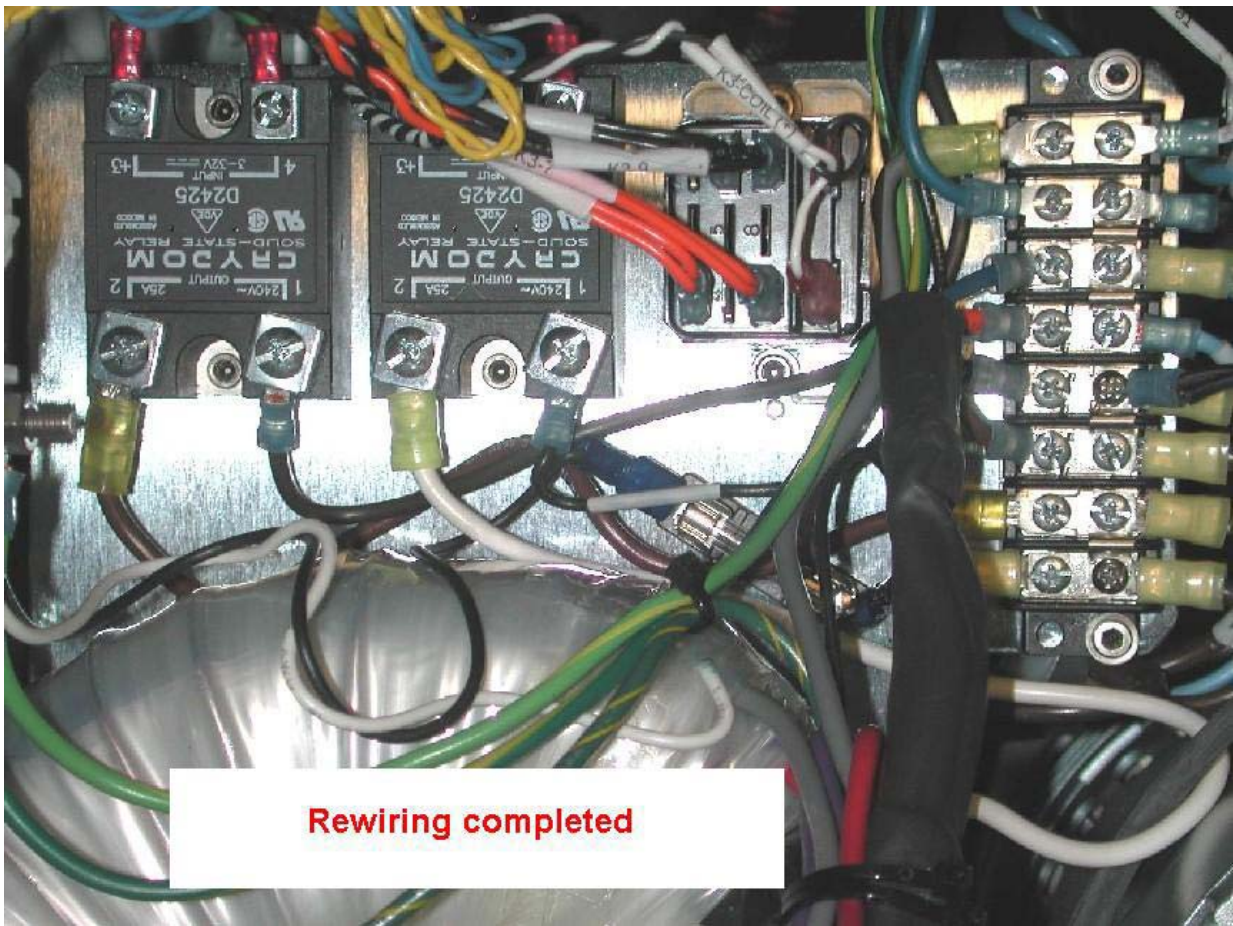


Figure 15: After Completion

33. Verify that all connections are secure by gently pulling on each terminal. Be sure to check all terminals on the terminal block, as well as on K1 and K2.

Stryker Instruments Service Bulletin

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Rev Level: NONE

Routine Service Bulletin X

Safety Service Bulletin

34. Verify that the following locations on the terminal block have jumpers. These should be the only jumpers on the terminal block.

- a. TB-2B to TB-3B
- b. TB-3B to TB-4B
- c. TB-5B to TB-6B
- d. TB-7B to TB-8B

35. Verify all terminals are tightened, and verify the following wire colors are attached to the terminal block:

- a. K2-2 Brown (jumper wire, labeled K2-2)
- b. K2-1 Brown (to vacuum pump)
- c. K1-2 White (from transformer)
- d. K1-1 Black (to smoke blower)
- e. TB-1A Gray (from transformer)
- f. TB-1B White (from smoke blower, labeled TB-1B)
- g. TB-2A Blue (from vacuum pump)
- h. TB-2B Black (cooling fan, labeled K1-2, 2 black wires, 1 terminal)
- i. TB-3A Blue (from transformer)
- j. TB-3B Blue (from power switch)
- k. TB-4A Orange (from transformer)
- l. TB-4B Blue (from K4 pin A labeled TB-5B)
- m. TB-5A Black (from transformer)
- n. TB-5B 1 Brown(to K4 pin 5) and cooling fans (2 black wires, 1 terminal)
- o. TB-6A Brown (from transformer)
- p. TB-6B Brown (from inrush limiters, labeled TB-7B)
- q. TB-7A Brown (jumper wire, labeled TB-7A)
- r. TB-7B Brown (to K4 pin 7, labeled TB-8B)
- s. TB-8A Brown (to Inrush Limiters, labeled TB-8A)
- t. TB-8B Brown (from power switch)

36. Refer to Service Bulletin SB-123 for the required testing.

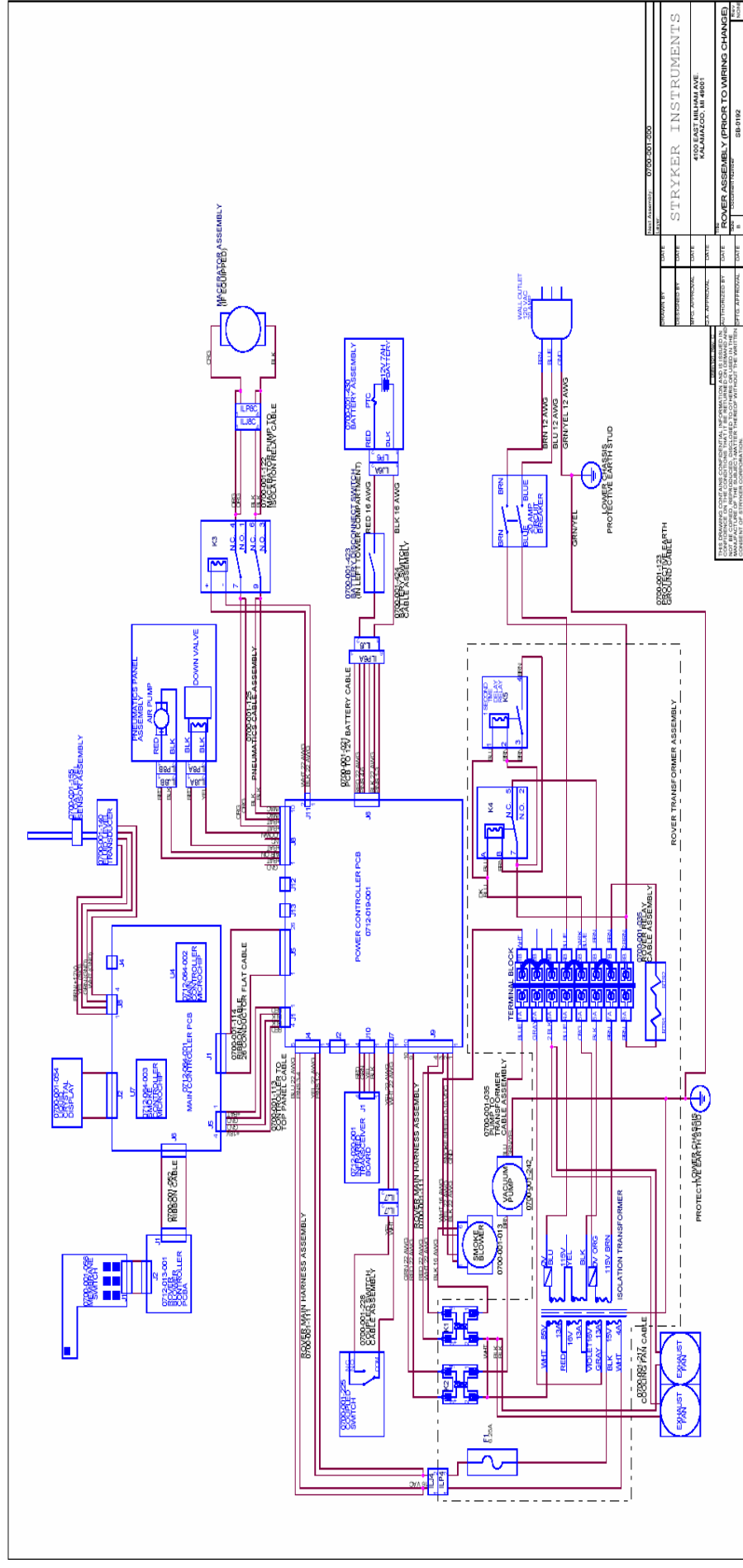


Figure 16: Wiring Diagram PRIOR to change

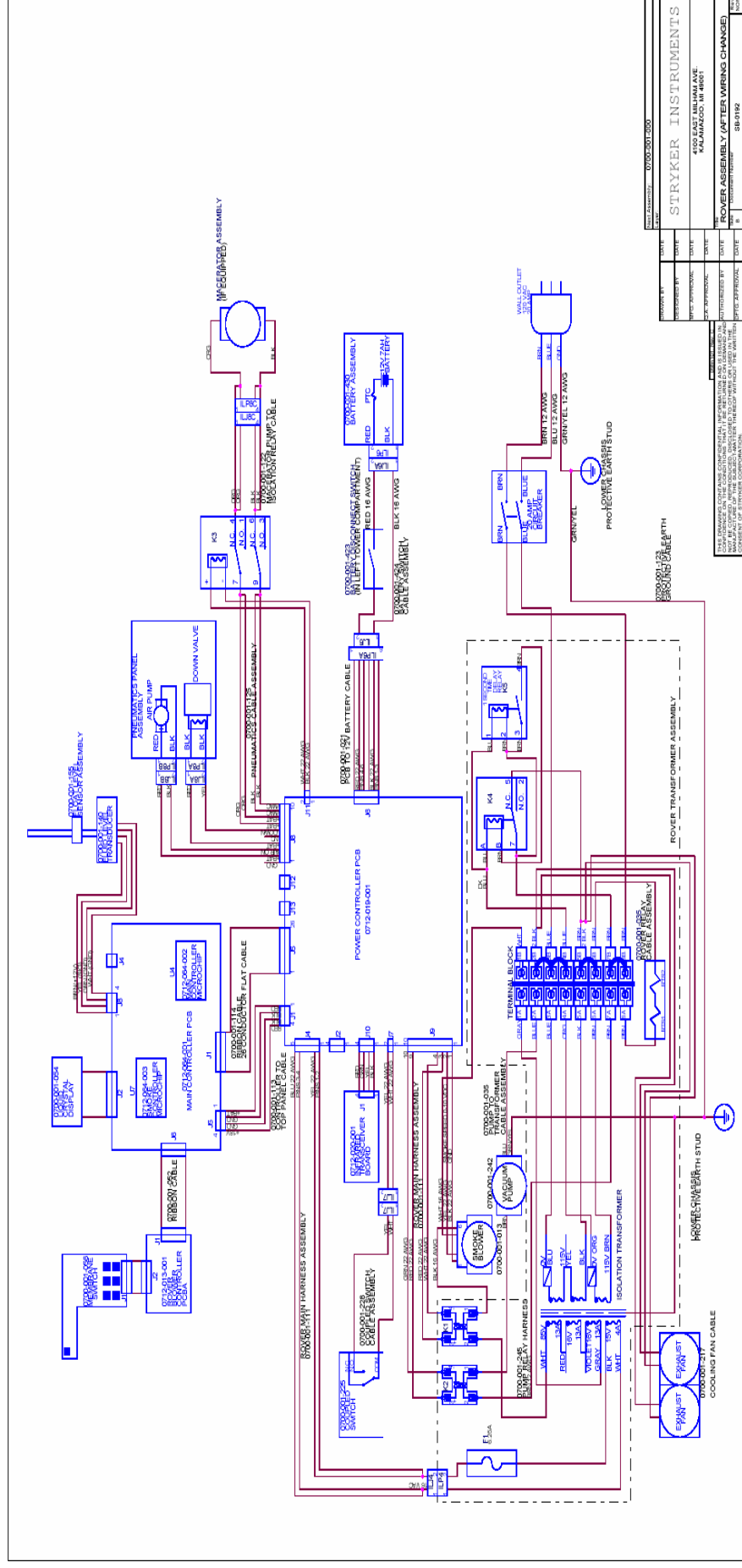


Figure 17: wiring diagram AFTER change has been completed

Stryker Instruments Service Bulletin

Service Bulletin Number **SB-0205**

Rev Level **__NONE__**

Routine Service Bulletin **__**

Safety Service Bulletin **X**

Applicability:

Stryker Subsidiary **_____**

Stryker Field Service **X**

Stryker In House Service **_____**

Approval	Name	Signature	Date
Originator	Dan DesRosiers	Dan DesRosiers	10/20/04
Quality	Todd Anderson	Todd Anderson	10/20/04
Regulatory Affairs	Jennifer Mars	Jennifer Mars	10/20/04
Manufacturing	Dan DesRosiers	Dan DesRosiers	10/20/04
Senior Engineer	Tom O'Keefe	Tom O'Keefe	10/20/04
Materials	Sherry Goforth	Sherry Goforth	10/20/04
Document Control	Jeanine Michael	Jeanine Michael	10/20/04

Title: **Interpower A/C Power Plug Replacement**

Purpose: **Instructions outlining the identification, removal, assembly, and testing for the Interpower A/C Power Plug Replacement.**

Scope: **700-1 Model Rovers, Serial #s (0101014-0322700603)
700-3 Model Rovers, Serial #s (0203177-0406301403)**

Distribution List: **All affected customers**

Documents requiring revision: **N/A**

Details:

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0205

Rev Level NONE

Routine Service Bulletin

Safety Service Bulletin X

1.) Identifying affected plugs

The “Interpower” plug shown below on the left must be replaced for both the 700-1(20A) model and the 700-3(15A) model. NOTE: The affected plugs have the black rubber strain relief and are labeled with the word, “interpower”.

“Interpower” Plug



New “Hubbell” Plug



2.) Identify the difference between a 20A and 15A plug

The 20 A plug, pictured below on the left, will only be present on the 700-1 Model Rovers. NOTE: The 20 A plug has a horizontal prong which differs from the commonly used 15 A(700-3) plug pictured on the right.

WARNING: It is very important that the proper plug is put back on the appropriate model.

20 A Plug for 700-1



15 A Plug for 700-3



Stryker Instruments Service Bulletin

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Rev Level NONE

Routine Service Bulletin

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3.) Removal of “Interpower” plug.

3.1 First unthread the external screws on the strain relief part of the plug.



3.2 Remove two screws from face of plug.



Stryker Instruments Service Bulletin

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Rev Level NONE

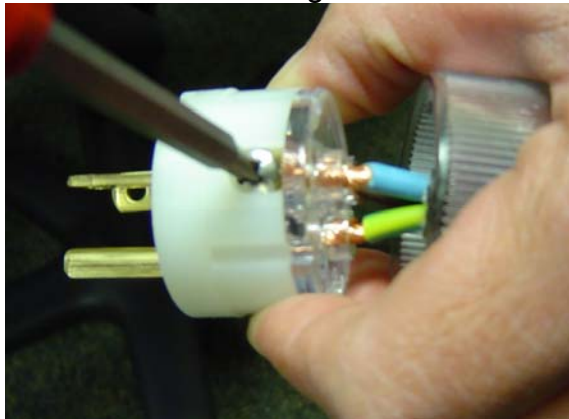
Routine Service Bulletin

Safety Service Bulletin X

- 3.3 Slide rear housing down cable to expose screws that hold conductors.



- 3.4 Loosen three screws that are making contact with each wire.



- 3.5 Remove plug from wires.
3.6 Remove rear housing from cable.

4.) Installation of "Hubbell" plug.

- 4.1 Slide the rear housing of the Hubbell plug assembly onto the cable.
4.2 Slide the stripped wire ends into the following holes:
ground wire(green/yellow) – green screw
blue wire – silver screw
brown wire – brass screw

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Rev Level NONE

Routine Service Bulletin

Safety Service Bulletin X

- 4.3 Ensure wires are fully seated and tighten screws.

WARNING: Visually inspect plug once all wires have been screwed into place. Ensure that no copper strands are permitted to touch any contact other than the intended.

- 4.4 Slide rear housing back down the cable and mate with plug, make sure tab on front of housing is aligned with mating feature that is aligned with ground stud.
- 4.5 Thread three screws back into front face of plug.
- 4.6 Ensure that the arrow on the black strain relief screw is turned toward the "LARGER THAN GAUGE" direction.
- 4.7 Tighten screws that fasten white strain relief portion of plug, alternate screws as you tighten to ensure proper alignment.
- 4.8 Conduct the following test once plug installation is complete.

5.) Test Procedure: Earth Impedance

NOTE: DO NOT TOUCH SYSTEM WHILE UNDER TEST.

- 5.1 Turn Rover Off.
- 5.2 Perform an earth impedance test using a calibrated Electrical Safety Analyzer.
- 5.3 Remove panel from smoke evacuator chamber, as shown below.



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Rev Level NONE

Routine Service Bulletin

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- 5.4 Measure earth impedance between the earth pin on the cord plug and one of the two vacuum regulator mounting bolts, as shown in picture below.



- 5.5 Resistance must be $< .180$ ohms.
5.6 Please contact the Stryker Service Call Center at 1-800-800-4236 ext. 5052, if unit does not pass test requirement.
5.7 Place panel back in smoke evacuator chamber.
5.8 Verify operation by plugging in Rover and turning on fluid suction.

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0207 Rev Level None

Routine Service Bulletin X Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Stryker In House Service

Approval	Name	Signature	Date
Originator	T Anderson	S/T. Anderson	11-19-04
Quality	T Anderson	S/T. Anderson	11-19-04
Regulatory Affairs	B Schramm	S/B. Schramm	11-19-04
Manufacturing	T Durnell	S/T. Durnell	11-19-04
Senior Engineer	T O'keefe	S/T. O'keefe	11-19-04
Materials	R Centofanti	S/R. Centofanti	11-19-04
Document Control	J Novotny	S/J. Novotny	12-6-04

Title: Neptune Docker Sprinkler Valve Relocation

Purpose: To relocate the Sprinkler Valve as in New Build production

Scope: 0700-004-000 & 0700-005-000 Dockers

Distribution List: Neptune Field Service Technicians

Documents requiring revision: N/A

Details:

Relocate the Sprinkler Valve using the following procedure:

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0207

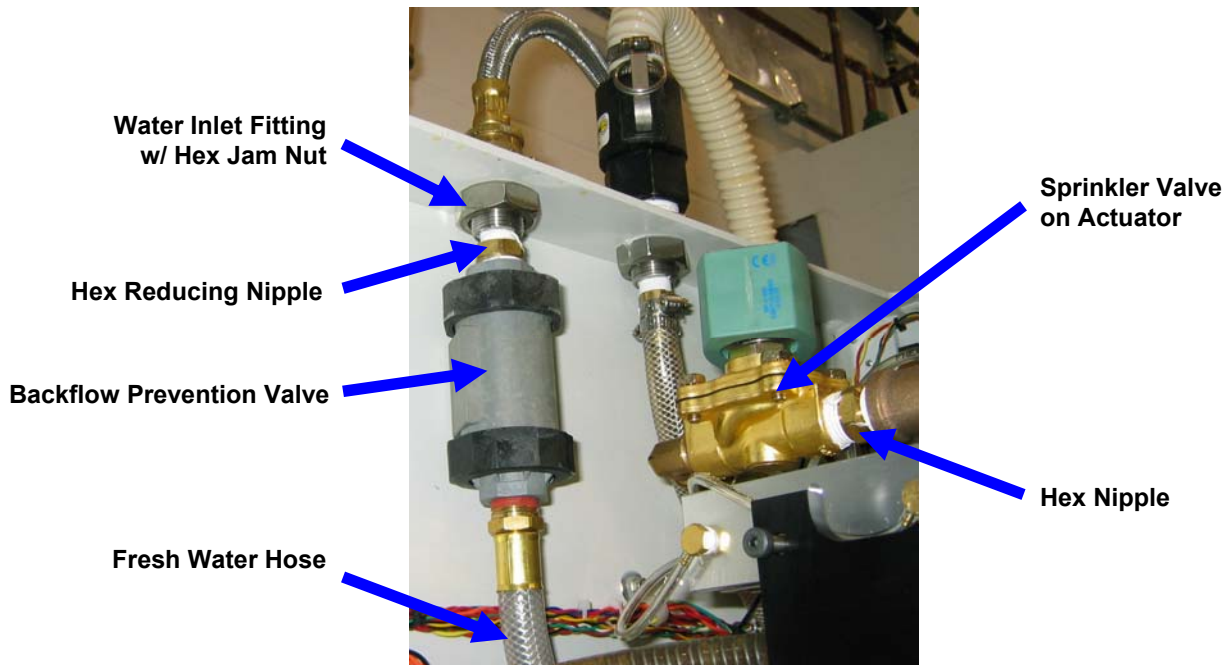
Rev Level None

Routine Service Bulletin X

Safety Service Bulletin

Details continued:

1. Turn off the water supply to the Docker.
2. Relieve the water pressure by Docking with a Rover while the water supply is turned off.
3. Turn off and unplug the Docker. Disconnect the water supply line to the Docker.
4. Open the two side doors and remove the top panel to gain access to the inside of the Docker
5. Position towels or other suitable material inside the Docker under the Backflow Prevention Valve and Actuator to soak up any water that is released.



Stryker Instruments Service Bulletin

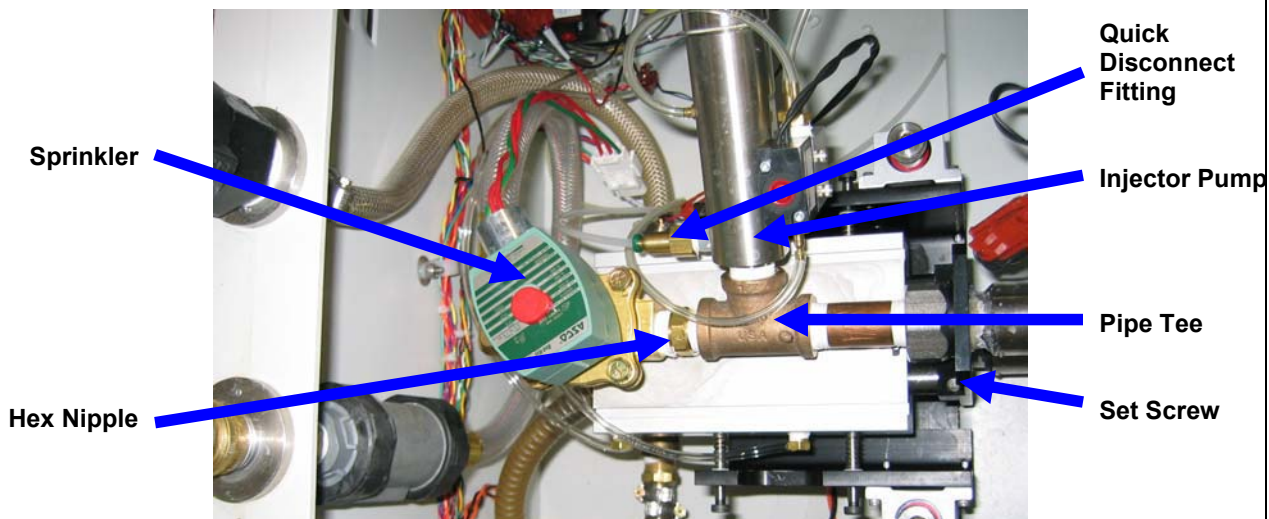
Service Bulletin Number SB-0207

Rev Level None

Routine Service Bulletin X

Safety Service Bulletin

6. Cut the Fresh Water Tubing that attaches the Backflow Prevention Valve to the Sprinkler Valve (see image above).
7. Remove the Backflow Prevention Valve with the tubing attached by unscrewing the Hex Reducing Nipple from the Water Inlet fitting (see image above).
8. Remove the Water Inlet Fitting by unscrewing the Hex Jam Nut from the underside of the fitting.



9. Rotate the Injector Pump 90° counter-clockwise so the Quick Disconnect fitting is pointed upwards using a pipe wrench. Disconnect the Detergent Tubing from both connectors and discard.
10. Disconnect Sprinkler Valve electrical connection.
11. Hold the front Docker Doors open with screw driver or similar object.
12. Loosen set-screw from coupling plate

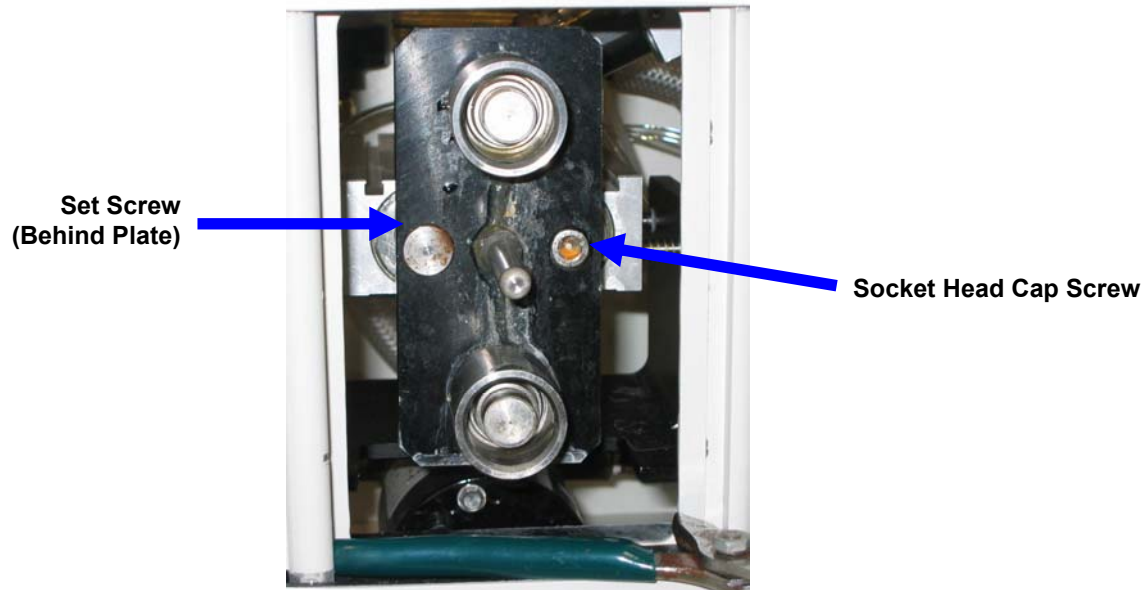
Stryker Instruments Service Bulletin

Service Bulletin Number SB-0207

Rev Level None

Routine Service Bulletin X

Safety Service Bulletin



13. Remove the Socket Head Cap Screw from the Actuator Rod by holding the rod with a Vise Grips (see above)
14. Separate the Coupling Plate from the Actuator Rods and pull forward into the opening.
15. Tilt the Coupling Plate at an angle so there is room to rotate the Sprinkler Valve when removing.
16. Remove the Sprinkler and attached hose by loosening and removing the Hex Nipple from the Pipe Tee.
17. Remove the Flare Elbow from the repair assembly and install into Pipe Tee. Fully tighten and align so the elbow is parallel with the Injector Pump.
18. Reinstall the Coupling Plate onto the Actuator Rods.

Stryker Instruments Service Bulletin

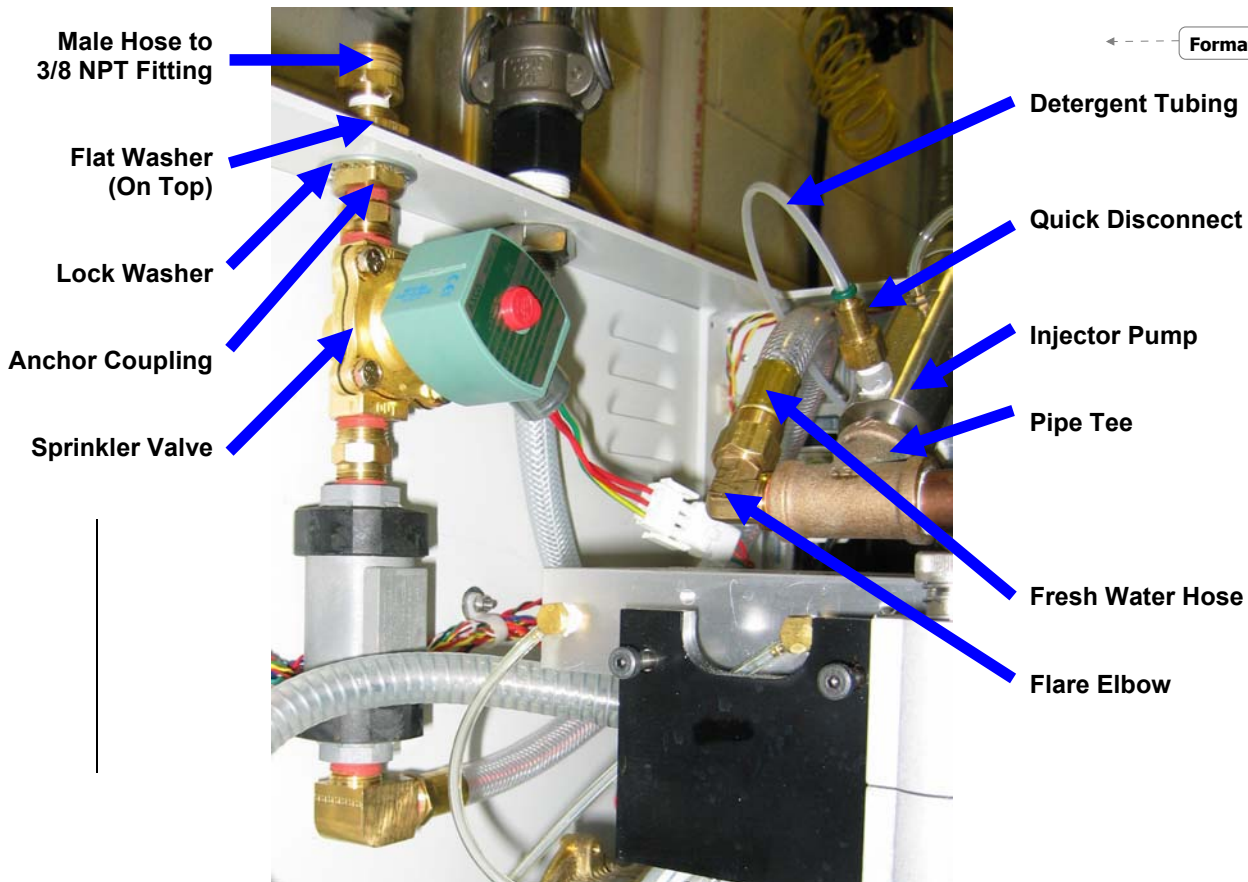
Service Bulletin Number SB-0207

Rev Level None

Routine Service Bulletin X

Safety Service Bulletin

19. Install and fully tighten the socket head cap screw into the Actuator Rod while holding the Rod with a Vise Grips.
20. Tighten the Set Screw on the Coupling Plate.
21. Remove the Male Hose to 3/8 NPT Fitting, Hex Nut, and Flat Washer from the repair assembly.



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Stryker Instruments Service Bulletin

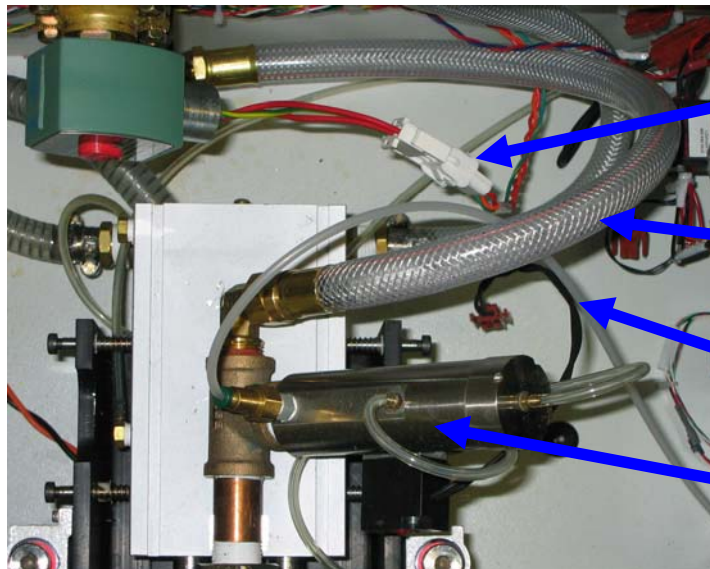
Service Bulletin Number SB-0207

Rev Level None

Routine Service Bulletin X

Safety Service Bulletin

22. Make certain the lock washer is on the Anchor Coupling with the teeth directed towards the Sprinkler Valve and install the repair assembly through the chassis where the Water Inlet Fitting was originally. The Sprinkler Valve should point towards the Actuator (see image above).
23. Place a thin bead of RTV around the underside of the flat washer to seal the washer to the outside of the Docker.
24. Place the Flat Washer and Hex Nut on the Fitting and fully tighten. Wipe away any excess RTV.
25. Install and fully tighten the Male Hose to 3/8 NPT Fitting.



Sprinkler Valve
Electrical
Connection

Fresh Water
Hose

Detergent Tubing
(Behind Fresh
Water Hose)

Injector Pump

26. Reconnect the Sprinkler Valve electrical connection.

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0207

Rev Level None

Routine Service Bulletin X

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27. Attach the open end of the Fresh Water Hose to the Flare Elbow and tighten as tight as possible. A natural loop will form and should be pointed towards the Pneumatics Panel. **Caution: DO NOT use Teflon tape or any other type of thread sealant with this connection.**
28. Connect the Docker Detergent Tube supplied with the repair kit from the Injector Pump to the Door. Route the tubing underneath the Fresh Water Hose (see image).
29. Reconnect water supply. Turn water supply on and check for leaks.
30. Plug Docker in and turn on. Perform two Docking Cycles with a Rover and inspect all connections for leaks.
31. Replace top panel and close the two side panels.

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0208

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

Applicability: All Rovers and Docking Stations

Stryker Subsidiary

Stryker Field Service X

Stryker In House Service

Approval	Name	Signature	Date
Originator	Brian Sharp	S/B.Sharp	7/21/05
Quality	Jerry Thompson	S/J.Thompson	7/25/05
Regulatory Affairs	Becca Schramm	S/B.Schramm	7/25/05
Manufacturing	Dan DesRosiers	S/D.DesRosiers	7/22/05
Senior Engineer	Tom O'Keefe	S/T.O'Keefe	8/10/05
Materials	Kevin Yeakey	S/K.Yeakey	7/25/05
Document Control	Crystal Hargreaves	S/C.Hargreaves	8/24/05

Title: Preventative Maintenance

Purpose: To detail the process necessary to perform a comprehensive Preventative Maintenance of the Neptune Rovers and Docking Stations.

Scope: Neptune Docking Station (0700-005-000) & (0700-004-000)
Neptune Rover – Gold (0700-001-000)
Neptune Rover – Silver (0700-003-000)
Neptune Rover – Bronze (0700-007-000)

Distribution List: ALL NEPTUNE Service Providers

Documents requiring revision: NEPTUNE Service Manual

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0208

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

Details:

Required Parts List for 6 month Preventative Maintenance

A. 0700-001-000 and 0700-003-000

<u>Part Number</u>	<u>Description</u>	<u>Qty.</u>
• 0700-035-000	Carbon Hose	1
• 0700-001-116	Vacuum Hose (Interior)	1
• 0700-034-000	Fluid Suction HEPA Filter	1
• 0700-001-315Q	Vacuum Pump Filter	2
• 0048-212-000	Elbow (If necessary)	1
• 0052-903-000	Compressor Vibration Mounts (If nec.)	4

B. 0700-004-000 and 0700-005-000

<u>Part Number</u>	<u>Description</u>	<u>Qty.</u>
• 0700-001-315	Impeller	1
• 0011-546-000	Filter Washer	2
• 0052-903-000	Compressor Vibration Mounts (If worn)	4

C. 0700-007-000

<u>Part Number</u>	<u>Description</u>	<u>Qty.</u>
• 0207-050-041	AA Batteries (QTY 2)	2

Stryker Instruments Service Bulletin

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Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

Preventative Maintenance Instructions:

A. Utilize Neptune PM Form (p/n 0700-001-742) to record Preventative Maintenance checks outlined in this Service Bulletin.

B. Gold and Silver Rovers (Models 700-1 and 700-3)

1. Enter Diagnostic Mode by holding "Smoke Mode" & "Up" keys simultaneously while turning on battery. View the errors and note any unusual or concerning errors. Clear errors after reviewing.
2. Inspect Canister for any cracks or leaks that will indicate that the canister should be replaced.
3. Visually inspect Couplers to ensure they are sealing properly and there are no indications of leaks.
4. Clean Rover, replace Hoses and Filters per Service Bulletin SB-0218. Complete PM steps 5-8 during the cleaning sequence as appropriate access is available.
5. While Canister Cap is removed, ensure flapper is present, that it fully closes, and that spring and pin are in good working condition. Note any concerns. If Flapper is the white flapper model, at a minimum, check it as future service needed and note that an upgrade is recommended.
6. While side panel is removed, unscrew the two filter cartridges from the side of the vacuum pump and replace the Vacuum Pump Filters.
7. While side panel is removed, ensure the hose connections between the Vacuum Pump and Silencer Manifold are secured.
8. While side panel is removed, inspect the elbow on the Silencer Manifold for cracks or breaking. Replace if necessary.

Stryker Instruments Service Bulletin

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Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

9. Enter Diagnostic Mode by holding "Smoke Mode" & "Up" keys simultaneously while turning on battery. Scroll to "Calibration" and enter by touching in sequence "Yes" – "Up" – "Down" – "Yes". Scroll to "Dock Control" and dock the Rover. Utilize "Coupling Out" and "Sprinkler On" functions to fill the Rover to the 10 liter mark on the canister.
10. Utilize the "Pump On" function to offload the rover and record the time required to offload 8 liters. If the offload rate is not below 50 seconds, troubleshoot the problem, comment on PM checklist, and perform repair based on severity of problem. Be aware that Docker may be the source of problem if several Rovers are slow. Note this on Docker PM.
11. Utilize "Undock" function and back out of calibration menu and diagnostic mode.
12. Reattach the right Side Panel.
13. Check to ensure Cap seal is tight and no air or water leaks exist.
14. Check Vacuum Level. Indicate the value and mark appropriate box based on values in the definitions on checklist. Service if below 15 in-Hg. Be aware that some facilities have intentionally had their vacuum level lowered for physician preference. If you suspect this, contact OR personnel before adjusting.
15. Check the function of the IV Pole and the Smoke Evacuator.
16. Inspect the unit per Service Bulletin-0123. Reference tests 4, 5, 6.

C. Rover Models 700-7

1. Inspect Canister for any cracks or leaks that will indicate that the canister should be replaced.
2. Visually inspect Couplers to ensure they are sealing properly and there are no indications of leaks.

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0208

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

3. Clean Rover per Service Bulletin SB-0218. Complete step PM step 4 while Canister Cap is removed
4. Ensure flapper is present, that it fully closes, and that spring and pin are in good working condition. Note any concerns or recommended upgrades.
5. Remove the Battery Door and Replace the two (2) AA Batteries. Reattach the door securely.
6. Manually fill Rover with water to approximately 10 liters. Dock Rover and record the time required to offload 8 liters. If the offload rate is not below 50 seconds, troubleshoot the problem, comment on PM checklist, and perform repair based on severity of problem. Be aware that Docker may be the source of problem if several Rovers are slow. Note this on Docker PM.
7. Check to ensure Cap seal is tight and no air or water leaks exist.
8. Dock the Rover and ensure all sequences of docking cycle are completed and no leaks are present.

D. Docker Models 700-5

1. Visually inspect Couplers to ensure they are sealing properly and there are no indications of leaks.
2. Wipe off any excess fluid on or around couplers.
3. Clean the LED's on the IR Board with a moist Q-Tip.
4. Remove the Docker Top Cover.
5. Inspect the entire fresh water loop (backflow preventer, hose, couplings, shut off valve) to ensure there are no leaks.

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0208

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

6. Remove the cover plate from the Offload Pump.
7. Replace the Macerator Impeller and O-ring in the offload pump and replace the cover plate. Be sure to secure the screws on the cover plate.
8. Remove the braided stainless steel fresh water hose from the docker. Remove old filter washer if present and insert new filter washer.
9. Inspect the Pneumatic Pump rubber mounts to ensure they are not worn or cracked. Replace if necessary. Note any replacements.
10. Inspect Injector Pump and rest of detergent loop for signs of leaking.
11. Check the state of the mounting of the Docker and comment on recommendations.
12. Check the level and height of the Docker with a couple of Rovers.
13. Inspect the unit per Service Bulletin-0123.
14. During Docking, inspect the offload pump and water hose for leaks around the cover plate.
15. Also during docking, inspect the detergent pump and all connections for signs of leaking.
16. Reattach the Docker Top Cover.

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0215 Rev Level NONE

Routine Service Bulletin X Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Stryker In House Service

Approval	Name	Signature	Date
Originator	Mike Irvine	S/M. Irvine	4-14-05
Quality	Jerry Thompson	S/J. Thomson	4-14-05
Regulatory Affairs	Becca Schramm	S/B. Schramm	4-14-05
Manufacturing	Troy Durnell	S/T. Durnell	4-14-05
Senior Engineer	Tom O'Keefe	S/T. O'Keefe	4-14-05
Materials	Sherry Goforth	S/S. Goforth	4-14-05
Document Control	Jenni Novotny	S/J. Novotny	4-14-05

Title: Replacing Neptune Main Controller Software Revision 5.2 with a lower software revision.

Purpose: To detail the necessary steps in replacing the revision 5.2 Main Controller Software in a 700-1 or 700-3 Rover with a lower revision.

Scope: This procedure should be performed any time the Rover Main Controller Software Revision 5.2 in a calibrated 700-1 or 700-3 Rover is replaced with a lower software revision. This procedure is required to ensure that the volume is displayed properly when the older software is installed.

Distribution List: Neptune Field Service

Documents requiring revision: N/A

Stryker Instruments Service Bulletin

Service Bulletin Number ____SB-0215__

Rev Level__NONE____

Routine Service Bulletin __X__

Safety Service Bulletin____

Details:

1. Turn both the power switch and the battery switch to the Off position.
2. Replace the 5.2 Main Controller Software with the lower revision of software.
3. While holding the "Smoke Mode" and "Down" buttons, turn on the battery switch to the Rover.
4. Choose the "Calibrate" option from the calibration menu, and press the Yes button. Note: on Rovers with 5.X software, it will be necessary to first enter the calibration menu by selecting the "Calibration" option, then entering, in sequence, Up, Down, Yes.
5. Select the Level Sensor, and press the yes button. If asked to confirm the sensor type, verify that the correct selection was made, and then press the Yes button. Verify that the Rover displays "Empty Tank". **Note: Do NOT press the yes button after the Rover displays "Empty Tank". If this done, the Rover calibration will need to be redone per SB-125!**
6. Turn off the battery switch to the Rover.
7. Turn on the battery switch to the Rover.
8. Dock the Rover, and verify that the docking cycle is properly executed.
9. At the conclusion of the docking cycle, plug the power cord in, and turn on the power switch to the Rover. Verify that the Rover displays the volume as 0.00 Liters (000 cc will be displayed if the Rover is programmed to display the volume in cc).

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0218

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

Applicability: Neptune Rovers

Stryker Subsidiary

Stryker Field Service X

Stryker In House Service

Approval	Name	Signature	Date
Originator	Brian Sharp	S/B.Sharp	7/25/05
Quality	Jerry Thompson	S/J.Thompson	7/25/05
Regulatory Affairs	Becca Schramm	S/B.Schramm	7/25/05
Manufacturing	Dan DesRosier	S/D.DesRosier	7/22/05
Senior Engineer	Tom O'Keefe	S/T.O'Keefe	8/10/05
Materials	Kevin Yeakey	S/K.Yeakey	7/25/05
Document Control	Jenni Novotny	S/J.Novotny	8/24/05

Title: Cleaning Procedure for Neptune Waste Management System

Purpose: To detail the process necessary to perform a comprehensive cleaning of the Neptune Rovers.

Scope: Neptune Rover – Gold (0700-001-000)
Neptune Rover – Silver (0700-003-000)
Neptune Rover – Bronze (0700-007-000)

Distribution List: ALL NEPTUNE Service Providers

Documents requiring revision: NEPTUNE Service Manual

Stryker Instruments Service Bulletin

Service Bulletin Number SB-0218

Rev Level NONE

Routine Service Bulletin X

Safety Service Bulletin

Details: Cleaning Procedure

A. Gold and Silver (Level Sensor) Rovers (Models 700-1 and 700-3)

1. Wipe off any excess fluid on or around couplers.
2. Clean LED's on IR Board with Moist Q-Tip.
3. Remove the Vacuum Hose (External) and Vacuum Pre-Filter. Clean top of Stainless Steel House Suction port as necessary.
NOTE: If Vacuum Hose (External) is the Carbon Hose model, then pre-filter should not be present.
4. **IF** the Vacuum Hose (External) was not the Carbon Hose model, then remove the Right Tower Panel and replace the Vacuum Hose (Internal). Use extreme care to not damage any components on main controller board.
5. Remove the Fluid Suction HEPA Filter and inspect for signs of fluid contamination. **IF** there are visible signs of dried drops of fluid present inside the filter **OR** if cleaning is part of 6 month PM, replace the HEPA Filter.
6. If HEPA Filter is replaced, reset filter hours with "Reset FI Filt ↑↓" function in Diagnostic Mode.
7. Reattach the Right Tower Panel.
8. Carefully remove the Canister Cap and spray underside with Simple Green d. Allow to soak while continuing procedure.
9. Fill the Rover Canister with mixture of 2 Liters warm water and 0.5 Liters of Simple Green d.

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10. Scrub the sides of the Canister, the base, and the ring with a soft bristled brush or shop towel and the detergent mixture. Check for any cracks or leaks in Canister during cleaning.
11. Using a shop towel, carefully wipe the inside, the rim, and both large ports in the Canister Cap with the cleaning mixture.
12. Once clean, spray the inside of Canister with Simple Green d and allow to soak while completing rest of procedure.
13. Reattach the Canister Cap.
14. Assemble Carbon Hose onto Rover.
15. Dock the Rover to remove all fluid from the canister. Ensure the Docker's water supply is turned off so fluid does not get added to the unit at the end of the docking sequence.
16. Remove the right Side Panel to gain access to the Macerator/Transducer Manifold.
17. Remove the IV Pole and compressor to obtain access to Macerator/Transducer Manifold (0700-001-000 only).
18. Carefully remove the grey level sensor wire from the two harnesses connected to the Rover chassis.
19. Remove the Macerator/Transducer Manifold. Ensure the power is turned off before removing transducer. Moving float while system is ON may cause errors.

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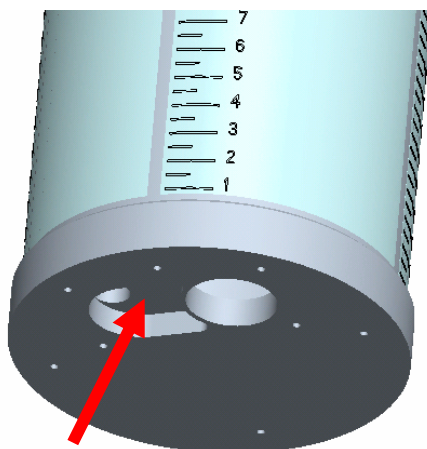
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20. Looking at the area where the Manifold was attached, inspect the underside of the Canister Base (**Figure 1**).



(Figure 1)

21. Fully clean any waste build up from the underside of the Canister Base with a shop towel treated with the Simple Green d.

NOTE: This area **MUST** be cleaned to ensure this potential source of smell is removed from the rover.

22. Clean any build up from inside the Macerator/Transducer Manifold and from the Float with a shop towel treated with the Simple Green d.
23. Once all areas are clean, spray the underside of canister and inside of manifold block with Simple Green d.
24. Inspect the Manifold and offload hose for clogs and replace if necessary.
25. Securely reattach the Macerator/Transducer Manifold to the Canister.
26. Fill the Rover with 6 L of water, and turn the Vacuum Pump **ON**.

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27. After one minute, look inside the canister. If bubbles are present then the Macerator/Transducer Manifold is not securely fastened. Empty the unit and reattach the Manifold. Ensure the o-ring seal is intact and in place.
28. Repeat two previous steps until no more leaks are detected.
29. Once no leaks are detected, place level sensor wire back in harnesses and fasten. Reattach the right Side Panel. **IF** cleaning is part of a PM, the Side Panel will be assembled later.
30. Continue PM sequence or perform Functional Test per SB-0123.

B. Gold Rover (Pressure Transducer) (Model 700-1)

1. Complete steps 1-10 of Section A.
2. Using a soft bristled pipe cleaner, thoroughly clean the waste ports exiting the bottom of the canister.
3. Continue with steps 11-14 of Section A.
4. Continue PM sequence or perform Functional Test per SB-0123.

C. Bronze Rover (Model 700-7)

1. Complete steps 1, 2, and 8-13 of Section A.
2. Clean inside and around House Suction Ports with small brush or Q-Tip. Use care to not damage check valves.
3. Visually inspect the Fresh Water Hose. If hose has growth in it, remove Hose from top of Canister Cap and clean using a large soft pipe cleaner or equivalent.
4. Continue PM sequence or dock the Rover and ensure all sequences of docking cycle are completed and no leaks are present.

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Rev Level None

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Safety Service Bulletin

Applicability:

Stryker Subsidiary

Stryker Field Service X

Stryker In House Service

Approval	Name	Signature	Date
Originator	JD Markland	S/J. MARKLAND	12/02/05
Quality	Jerry Thompson	S/J. THOMPSON	12/05/05
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Document Control	Crystal Hargreaves	S/C. HARGREAVES	12/06/05

Title: Neptune Vacuum Pump Replacement

Purpose: To demonstrate the sequence of steps for vacuum pump replacement. For planning purposes, a person should allot 4 hours for the first time they replace a vacuum pump and 3 hours for subsequent replacements. For replacement vanes approx. 2 hours should be allotted.

Scope: Vacuum pump replacement is necessary when fluid has been introduced into the vacuum pump. Other reasons may necessitate vacuum pump replacement.

Distribution List:

Documents requiring revision: None

Details:

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1. If the vacuum pump is being replaced due to fluid introduction, it is required to take personal safety precautions including:
 - a. Treating all components as contaminated medical waste
 - b. Wearing personal protective equipment (PPE), including, gloves, eye goggles, surgical mask and covering over any open wounds.
2. Remove both side access covers.
3. Remove I.V. pole Note: this step is N/A for non I.V. pole models.
 - a. Remove pneumatics at base of I.V. pole
 - b. Remove brass pneumatics fitting at base of I.V. pole, take care to not damage.
 - c. Remove socket head bolt from very bottom of Rover that holds the I.V. pole in place.
4. Remove smoke blower, there are three bolts; two are socket head cap screws that are accessed inside the rover. One flat head cap screw is accessed by removal of smoke filter and is at the bottom of this enclosure.
Note: this step is N/A for non-smoke blower models.



Here you can see the flat head screw in the smoke filter enclosure area, it is highlighted by the Allen wrench inserted.

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- a. On the smoke blower there is a ribbon cable that will become accessible once the set screws have been removed.
5. At the vacuum pump, disconnect the exhaust tubing that goes to the silencer manifold.



Exhaust tubing to silencer manifold

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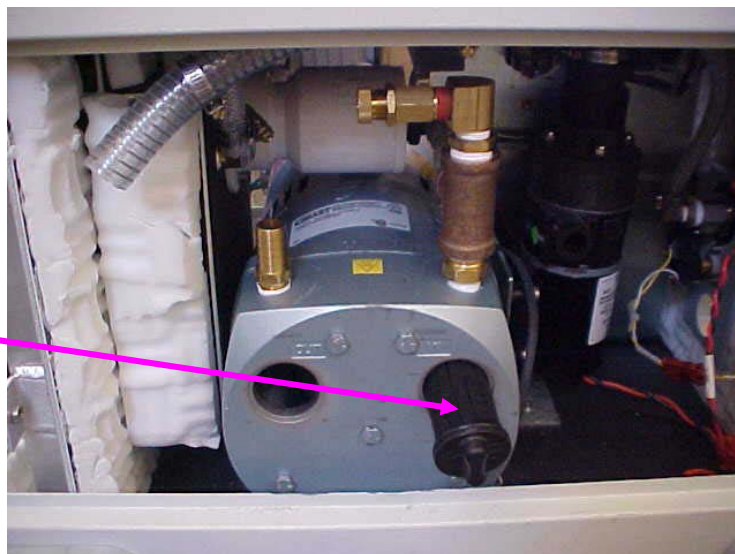
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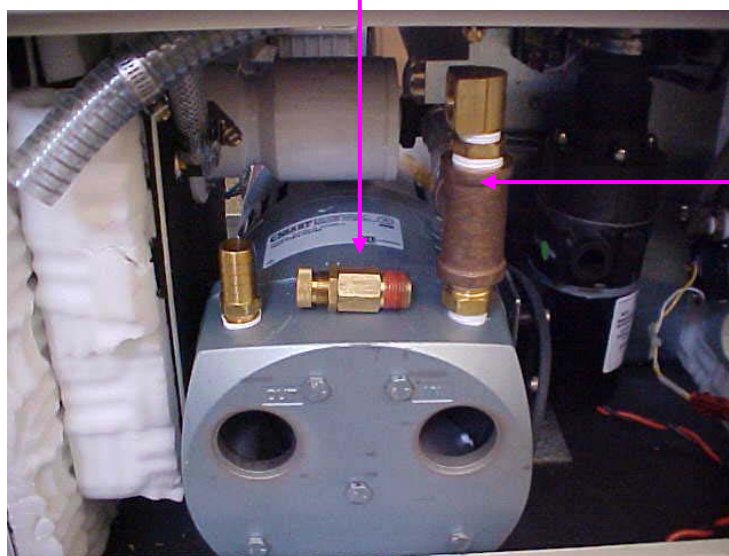
Safety Service Bulletin

6. Remove the filters. These filters screw into the motor housing and effectively connect in the same way as the five end bolts.

One filter
partially
removed.



7. Disconnect and remove the pressure relief valve.



Disconnect in
step #10

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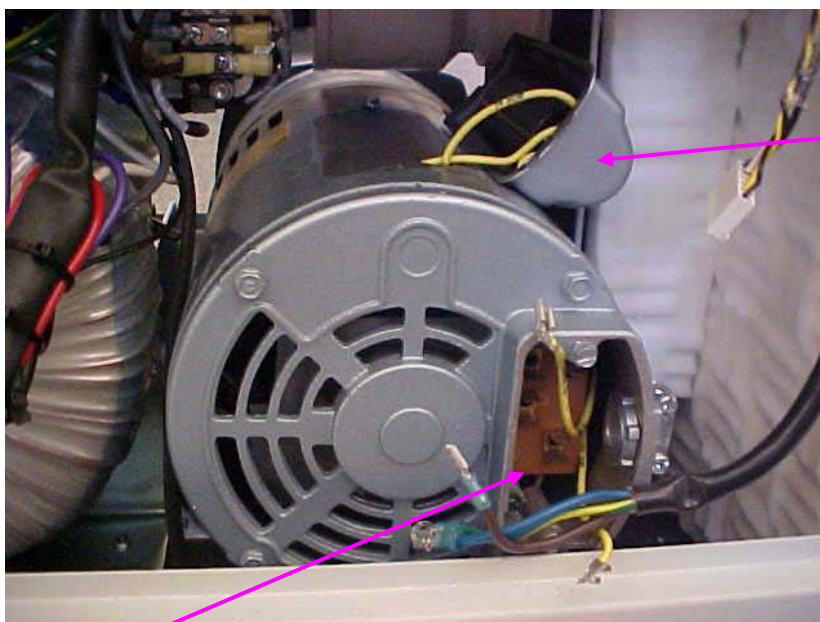
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Safety Service Bulletin

8. Disconnect dome cover and wiring harness cover on vacuum pump.



Dome cover,
two screws,
lay cover on
side as
shown.

Remove cover; note brown wire is at top right; T-3 wire is to left and almost at same height as brown wire. T-2 wire is at the lowest connection and the blue wire is just above T-2.

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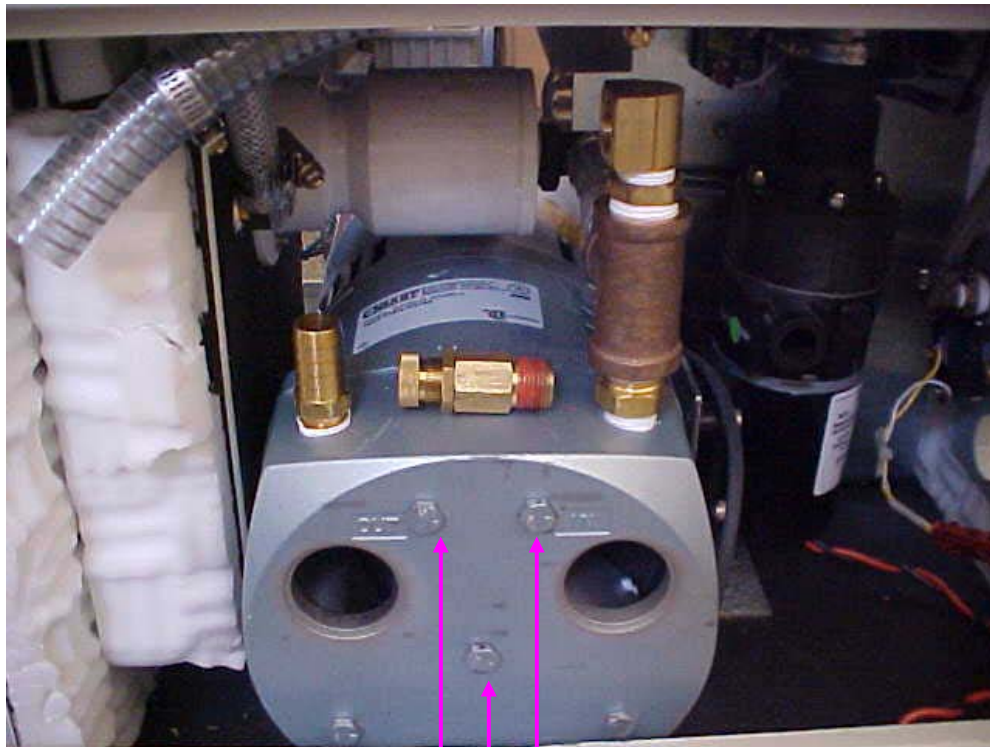
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9. Remove end bell housing; there are five bolts that hold it in place. Take care not to damage the gasket, if gasket sticks to the housing that is fortunate as it facilitates reinstallation. Also, the vacuum pump can be maneuvered in place because the sound mounts have some play to them.



Five bolts to remove end bell. This sets the stage for disconnecting the pump from the inlet hose.

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10. Disconnecting the inlet tube that connects the vacuum pumps brass piping from the black plastic elbow (coming off the white check valve) is best accomplished by pulling the entire end of the pump housing, thus disconnecting it from the inlet hose.



Pull on this housing to disconnect the tube at this point.

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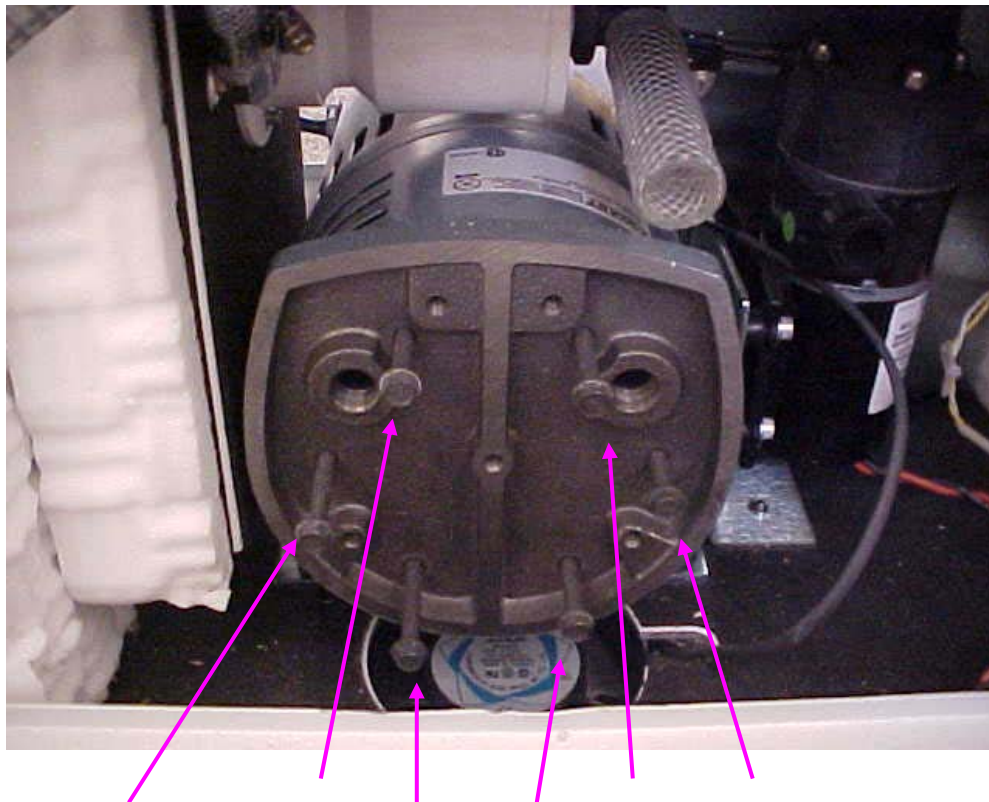
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11. Inspection Step; the following is done not to facilitate removal but to inspect the carbon fiber blades and their enclosure to check for possible salvage through thorough cleaning.



Remove these five bolts for access to carbon fiber blades and their enclosure

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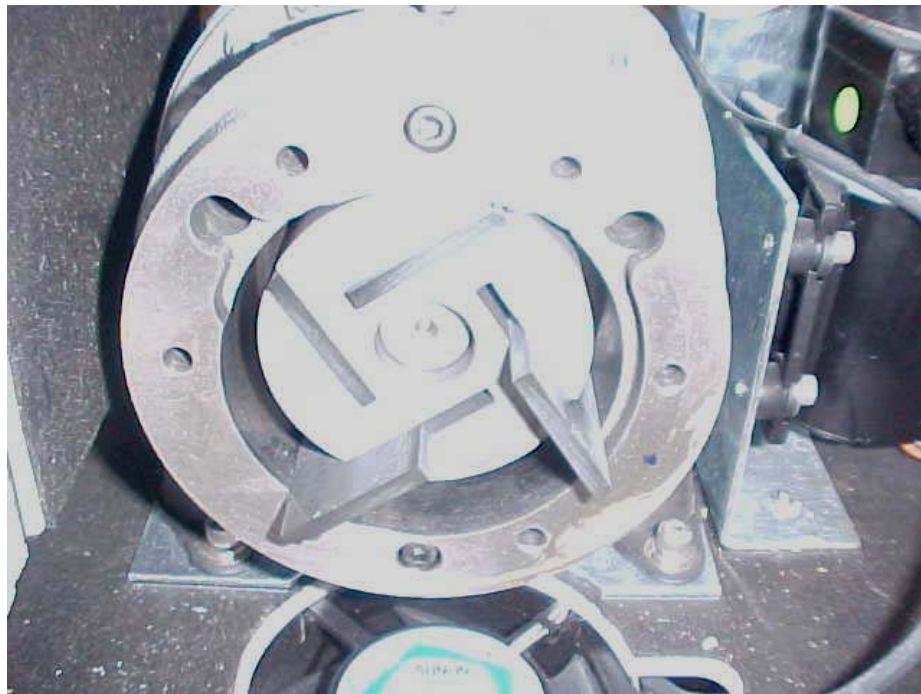
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12. This is what the “pump” area should look like. It should be absolutely dry.



Two of the four carbon fiber blades have been pulled out slightly. If these blades are shattered then they need to be replaced and if the housing is scored then the entire pump should be replaced.

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13. To remove the pump, lay the Rover on its side.
DO NOT REMOVE THE FOUR BOLTS VACUUM PUMP BOLTS WITH THE ROVER ON Its SIDE, ONLY LOOSEN THEM. Loosen the bolts with the rover in this position but stand the rover upright before removing bolts. Lay the Rover so that it is resting on the push bar. Here is a picture of the bottom of the Rover (the cover plate has been removed by removing the six socket head cap screws). In this picture are four pieces of blue tape; each is next to one of the four bolts that hold the vacuum pump in place. These four bolts come up and thread into the base plate of the vacuum pump. Before loosening the vacuum pump bolts remove the inside two bolts from each of the two fans. These bolts pass up through the vacuum pump base plate and interfere with the removal or reinstallation of a vacuum pump. One of the four bolts is highlighted by a piece of pink tape.



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View of the bottom of the rover, it is laying on it's side in this picture with the cover plate removed.

14. Once the cover plate is removed, four fan bolts are removed (two from each fan) and the four vacuum pump bolts are loosened, stand the rover upright, and remove the four bolts. From the smoke blower side of the rover, remove the vacuum pump.



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15. Install the new vacuum pump in reverse order. It will be necessary to take off the end housing for two reasons: one, it is necessary to “shorten” the pump to get it into the rover, two, it facilitates the reattachment of the suction hose (from black elbow off white check valve) to the barbed fitting of the vacuum pump.



Shown is the end housing detached from the main body of the vacuum pump and the entire end housing being pushed forward while attaching the suction hose to the barbed fitting.

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16. Once the vacuum pump is in the rover, attach the end housing and the vacuum inlet hose simultaneously. Bolt the end housing back onto the vacuum pump. Wait till the end before connecting the four bolts from the bottom.
17. Reinstall the power cable, brown connects at top, T-3 to left and at about the same height, T-2 at the very bottom, blue just above T-2. Also connect ground wire. Replace cover plate over wire connections.
18. Reinstall dome cover on the vacuum pump. (See step 8)
19. Reconnect smoke blower ribbon cable and then reinstall the smoke blower by connecting all three bolts. Take care not to strip the flat head set screw that is located in the smoke filter area.
20. Reconnect the outlet hose from vacuum pump to silencer manifold.
21. With the rover still in the upright position, connect the four bolts from the bottom of the rover up into the base plate.
22. With the four vacuum pump bolts fairly tight, lay the rover on its side so that is resting on its push bar, finish tightening the bolts.
23. Reinstall the four fan bolts.
24. Reinstall the bottom cover, leave all socket head cap screws loose until the all bolts are started, tighten all six bolts.
25. Stand rover upright.
26. Reinstall new suction HEPA filter.

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27. Test unit and ensure that it works, all connections are tight and with the four port manifold opening blocked, set the relief valve to obtain a suction of 18.5" Hg.(+/- .5" Hg)
28. Ensure there are no vacuum leaks. The vacuum gauge should maintain the level set and not decrease or waiver.
29. Replace both side access covers.

To replace blades and clean motor enclosure area:

- Perform steps, 1,2,3,5,6,7,9,10 and 11 of the above procedure.

Item	Part No.	Part Name	Qty.
A	0700-901-110	BASE ROVER ASSEMBLY	1
B	0700-001-030	ROVER TRANSFORMER ASSEMBLY	1
C	0011-511-000	FLAT WASHER (#10)	4
D	0004-521-000	SHCS 10-32 X 5/8	4
E	0700-001-014	BLOWER GASKET	1
F	0700-001-013	VACUUM MOTOR	1
H	0014-107-000	RUBBER WASHER #8	6
J	0011-510-000	FLAT WASHER (#8)	5
K	0004-533-000	SHCS 8/32 X 1	3
L	0700-001-015	STANDOFF	1
M	0700-001-016	STANDOFF	2
N	0001-159-000	FLAT HEAD SOCKET SCREW (#8)	1
P	0700-001-012	FINGER GUARD	1
R	0004-529-000	SHCS 6-32 X 3/8	4
S	0700-001-011	SMOKE FILTER PLENUM	1
T	0004-156-000	SHCS 4-40 X 1/4	4
W	0700-001-017	ROVER POWER CORD	1
Y	0700-001-412	POWER SWITCH	1
AA	0700-001-409	POWER SWITCH SPLASH COVER	1
AB	0004-525-000	SHCS 8-32 X 3/8	4
AC	0013-018-000	LOCK WASHER #10 EXTERNAL	10
AD	0015-004-000	HEX NUT 10-32	5

[14] TORQUE TO 150 IN-LBS.

[13] ROTATE THE POLE SO THE PNEUMATIC ELBOW FITTING NEAR THE BOTTOM OF THE POLE IS TOWARDS THE BACK OF THE ROVER (AWAY FROM THE VACUUM PUMP).

[12] PLACE THE FOLLOWING SEQUENCE OF PARTS ONTO THE GROUND STUD INSIDE THE RIGHT SIDE OF TOWER TO THE RIGHT OF THE BATTERY TRAY:
A. #10 EXTERNAL LOCK WASHER (0013-018-000).
B. GREEN/YELLOW WIRE OF POWER CORD.
C. #10 EXTERNAL LOCK WASHER (0013-018-000).
D. 10-32 HEX NUT (0015-004-000).
E. TORQUE NUT TO 25 IN-LBS
F. #10 EXTERNAL LOCK WASHER (0013-018-000).
G. PROTECTIVE EARTH GROUND CABLE (GREEN/YELLOW WIRE).
H. #10 EXTERNAL LOCK WASHER (0013-018-000).
I. TORQUE NUT TO 25 IN-LBS.

[11] SNAP POWER SWITCH INTO CUTOUT IN THE FRONT TOWER ASSEMBLY. THE "ON" POSITION SHOULD BE ON TOP. THE FOLLOWING APPLIES WHILE LOOKING STRAIGHT AT THE TERMINALS ON THE BACK OF THE POWER SWITCH:
A. ROUTE BLUE AND BROWN WIRES ON POWER CORD TO THE POWER SWITCH. BLUE WIRE ON BOTTOM LEFT AND BROWN WIRE ON BOTTOM RIGHT.
B. ROUTE THE TRANSFORMER TO CIRCUIT BREAKER CABLE UP THE BACK SURFACE OF THE TOWER AND CONNECT THE BLUE WIRE TO THE TOP LEFT TERMINAL AND THE BROWN WIRE TO THE TOP RIGHT TERMINAL OF THE POWER SWITCH.

[10] WHEN REPLACING THE PLUG ON THE POWER CORD, TWIST STRANDS OF BROWN WIRE TOGETHER AND INSERT INTO BLACK SOCKET. TWIST STRANDS OF BLUE WIRE TOGETHER AND INSERT INTO CLEAR SOCKET. TWIST STRANDS OF GREEN WIRE TOGETHER AND INSERT INTO GREEN SOCKET. NOTE: GREEN WIRE SHOULD BE SLIGHTLY LONGER THAN THE OTHER TWO WIRES.

[9] APPLY RTV108 TO BOTTOM SURFACE OF SMOKE FILTER PLENUM.

[8] TORQUE TO 11 IN-LBS.

[7] TORQUE TO 25 IN-LBS.

[6] TORQUE TO 40 IN-LBS.

[5] APPLY LOCTITE 222.

4. MAKE SURE FAN CABLE AND FITTINGS ON COUPLINGS ARE OUT OF THE WAY PRIOR TO ASSEMBLING.
3. SHEET 7 APPLIES TO ROVERS THAT HAVE THE (0712-064-001) MAIN CONTROLLER BOARD INSTALLED.
2. SHEET 6 APPLIES TO ROVERS THAT HAVE THE (0712-012-001) MAIN CONTROLLER BOARD AND (0712-011-001) EXTERNAL A/D BOARD INSTALLED.

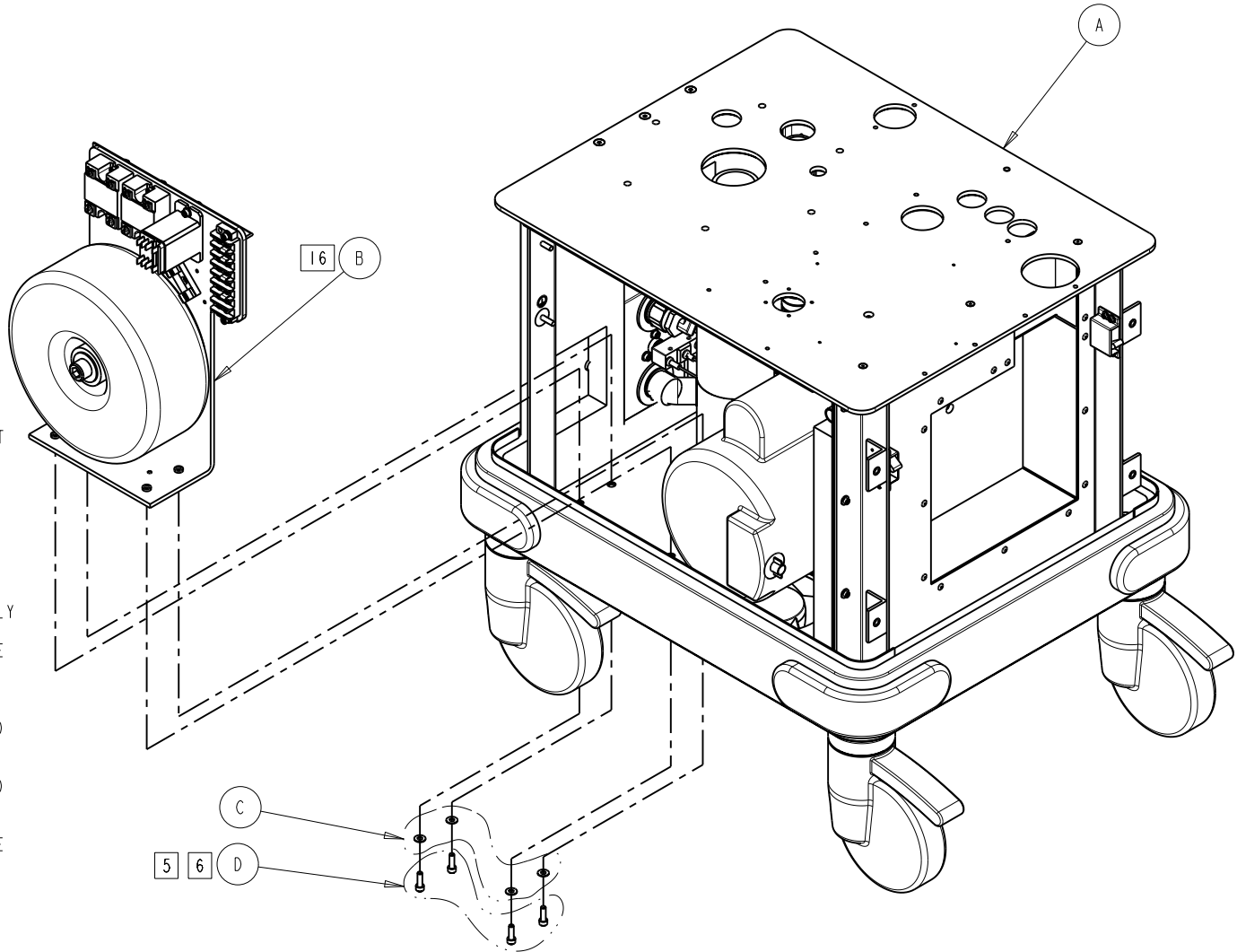
NOTES: 1. APPLIES TO ROVER MODEL 700-1 (PRESSURE TRANSDUCER).

Item	Part No.	Part Name	Qty.
AE	0058-334-000	ADHESIVE CABLE MOUNT	1
AF	0700-001-060	POWER IV POLE ASSEMBLY	1
AH	0011-508-000	FLAT WASHER (5/16)	1
AJ	0004-536-000	SHCS 5/16-18 X 3/4	1
AK	0011-491-000	FLAT WASHER (#6)	2
AL	0004-523-000	SHCS 6-32 X 1/2	2
AM	0700-001-070	PNEUMATICS PANEL ASSEMBLY	1
AN	0700-001-021	PANEL RETAINER	2
AP	0700-901-050	USER INTERFACE PANEL ASSEMBLY	1
AR	0050-059-000	PAN HEAD SCREW #4 X 3/8	4
AS	0700-001-018	TOWER FRONT FOAM	1
AT	0700-001-019	TOWER BACK FOAM	1
AW	0700-001-080	TOWER LEFT PANEL ASSEMBLY	1
AY	0700-001-714	SPEC LABEL (SMOKE FILTER COMPARTMENT)	1
BA	0700-001-702	SPEC LABEL (700-1 ROVER S/N LABEL)	1
BB	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR
BC	0072-002-061	RTV 108 (NOT SHOWN)	AR

[17] PLACE THE FOLLOWING SEQUENCE OF PARTS ONTO THE GROUND STUD ON THE BACK LEFT CHASSIS SUPPORT BY THE TRANSFORMER.
A. #10 EXTERNAL LOCK WASHER (0013-018-000).
B. GREEN/YELLOW WIRE FROM TRANSFORMER.
C. #10 EXTERNAL LOCK WASHER (0013-018-000).
D. 10-32 HEX NUT (0015-004-000).
E. TORQUE NUT TO 25 IN-LBS.
F. #10 EXTERNAL LOCK WASHER (0013-018-000).
G. GREEN/YELLOW WIRE FROM PUMP TO TRANSFORMER CABLE ASSEMBLY (CORD ATTACHED TO VACUUM PUMP).
H. #10 EXTERNAL LOCK WASHER (0013-018-000).
I. 10-32 HEX NUT (0015-004-000).
J. TORQUE NUT TO 25 IN-LBS.
K. #10 EXTERNAL LOCK WASHER (0013-018-000).
L. GREEN/YELLOW WIRE OF PROTECTIVE EARTH GROUND CABLE ASSEMBLY (FROM SLIT CONDUIT).
M. #10 EXTERNAL LOCK WASHER (0013-018-000).
N. 10-32 HEX NUT (0015-004-000).
O. TORQUE TO 25 IN-LBS.

[16] CONNECT THE TERMINALS ON THE CABLE ATTACHED TO THE VACUUM PUMP TO THE TRANSFORMER ASSEMBLY.
A. WRAP THE BLUE AROUND THE BROWN AND GREEN WIRES AND ATTACH TO TB-1A. (FLAT SIDE TOWARD TERMINAL BLOCK).
B. ROUTE THE BROWN WIRE BEHIND THE WHITE WIRES AND CONNECT IT TO K2-1. (THE TERMINAL GOES BEHIND THE PLATE).
C. CONNECT THE BLACK AND WHITE WIRES COMING FROM THE VACUUM MOTOR. (WHITE TO TB-1B) AND (BLACK TO KI-1).
D. ATTACH THE FAN CABLE TO THE TRANSFORMER ASSEMBLY. CUT THE PART NUMBER LABEL OFF THE CABLE. BE CAREFUL NOT TO DAMAGE THE INSULATION. END WITH THE KI-2 LABEL TO KI-2. MAKE SURE WHITE WIRE ALREADY ATTACHED STAYS ATTACHED. THE OTHER END TO TB-3A.
E. ATTACH THE TRANSFORMER TO CIRCUIT BREAKER CABLE ASSEMBLY WHICH IS THE BLUE/BROWN TWISTED PAIR COMING ACROSS THE CENTER OF THE CHASSIS. BROWN TO TB-8B. THE BROWN WIRE ALREADY ATTACHED SHOULD STAY TO THE RIGHT AND THE NEW WIRE GOES TO THE LEFT. BLUE TO TB-4B.
F. CONNECT THE RED/GREEN TWISTED PAIR OF WIRES WITH THE K2-4 AND K2-3 TERMINALS TO THE K2 RELAY. (RED TO K2-3) AND (GREEN TO K2-4).
G. CONNECT THE RED/WHITE TWISTED PAIR OF WIRES WITH THE KI-4 AND KI-3 TERMINALS TO THE KI RELAY. (RED TO KI-3) AND (WHITE TO KI-4).
H. CONNECT THE ORANGE/BLACK TWISTED PAIRS TO THE K3 RELAY WITH THE FLATS ON THE TERMINAL TOWARDS THE FRONT OF THE ROVER. (BLACK K3-6), (ORANGE K3-4), (BLACK K3-9) AND (ORANGE K3-7).
I. CONNECT THE BLACK/WHITE PAIR TO THE K3 RELAY. BLACK LABELED K3-COIL (-) TO B (ON TOP) AND WHITE LABELED K3-COIL (+) TO A (ON BOTTOM).
J. CONNECT THE BLUE/YELLOW TWISTED PAIR OF WIRES WITH THE 1LJ4 CONNECTOR TO THE MATING CONNECTOR ON THE TRANSFORMER.
K. TORQUE TERMINALS 3 AND 4 ON THE KI AND K2 RELAYS TO 10 IN-LBS.
L. TORQUE TERMINALS 1 AND 2 ON THE KI AND K2 RELAYS TO 17 IN-LBS.
M. TORQUE TERMINALS ON TH ETERMINAL BLOCK TO 10 IN-LBS. IF TERMINALS CAN STILL BE MOVED, HAND-TIGHTEN FURTHER.

[15] CONNECT THE PNEUMATIC PANEL ASSEMBLY (0700-001-070) AS FOLLOWS:
A. CONNECT THE 1LJ8A CONNECTOR (YELLOW/RED) TO THE SOLENOID ON THE PNEUMATICS PANEL ASSEMBLY.
B. CONNECT THE 1LJ8B CONNECTOR (BLACK/RED) TO THE COMPRESSOR ON THE PNEUMATICS PANEL ASSEMBLY.
C. ATTACH THE FREE END OF THE PNEUMATICS TUBING TO THE PNEUMATICS ELBOW FITTING AT THE BOTTOM OF THE POWER IV POLE ASSEMBLY.



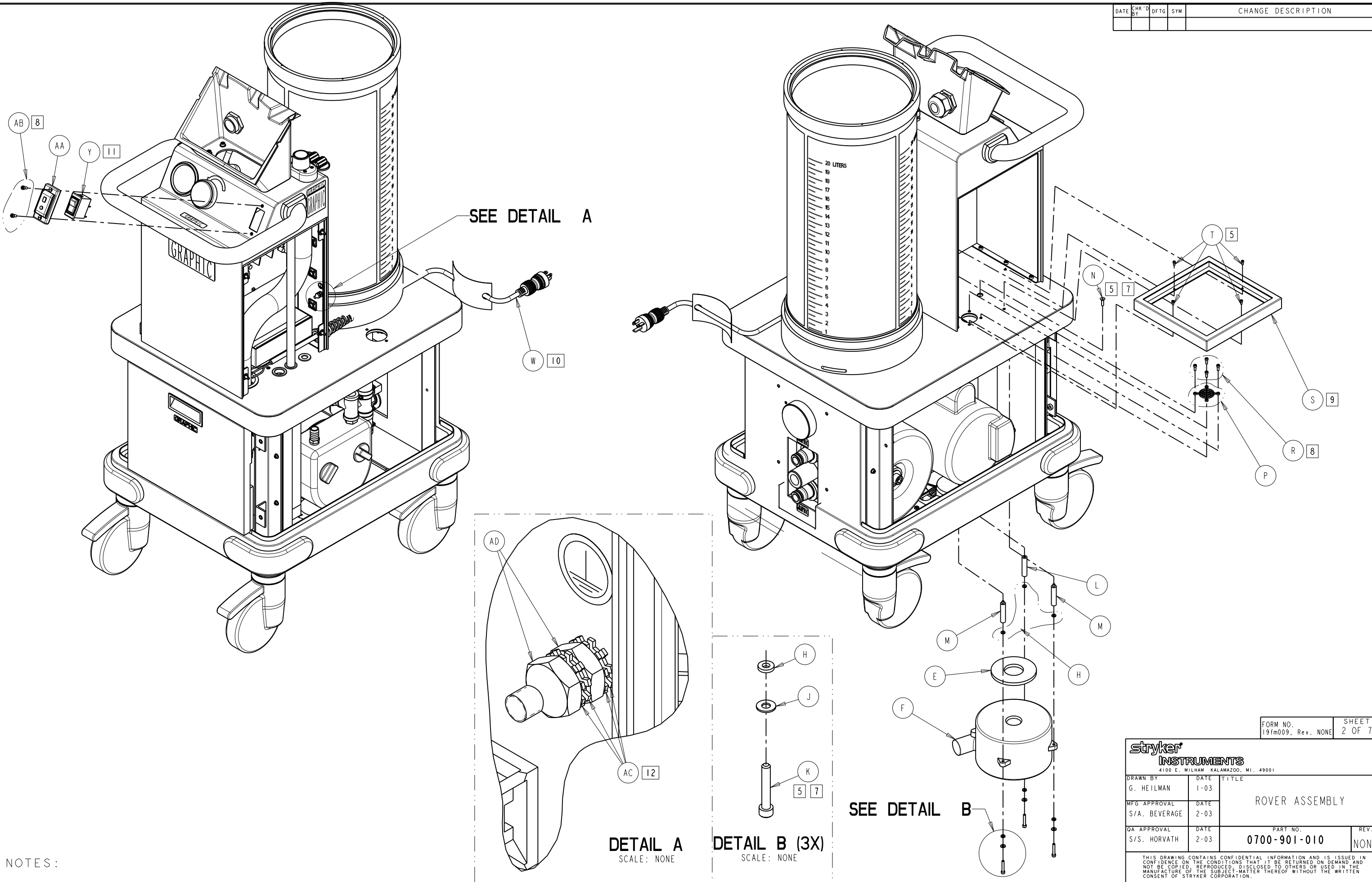
DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

FORM NO. 191m009, Rev. NONE	SHEET 1 OF 7
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stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY G. HEILMAN	DATE 1-03	TITLE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03	PART NO. 0700-901-010	REV. NONE

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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



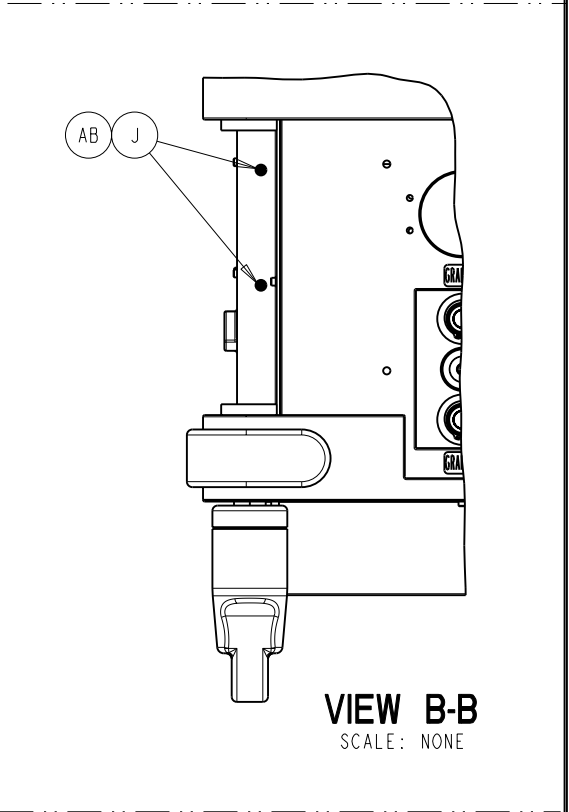
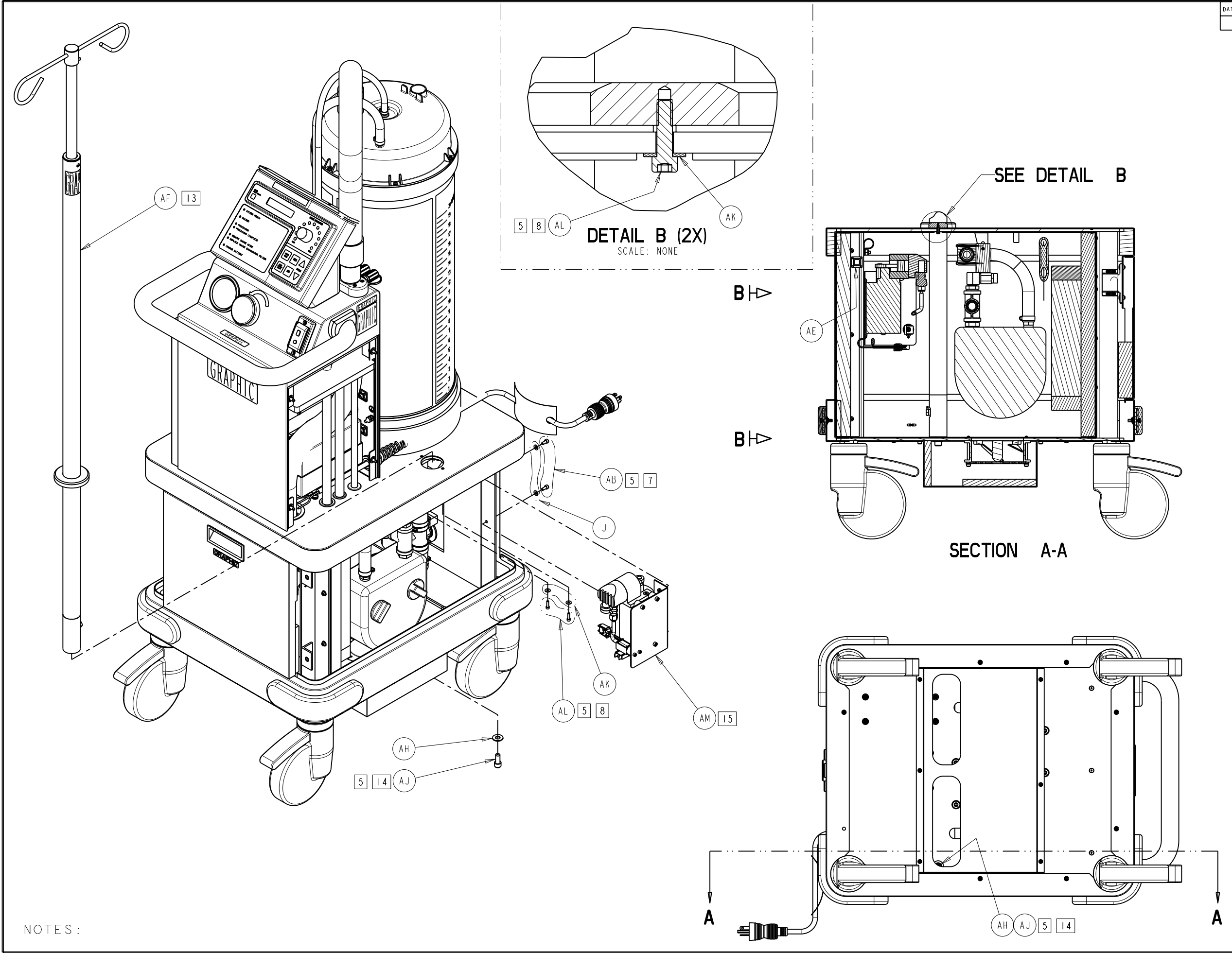
NOTES:

FORM NO. 19fm009, Rev. NONE	SHEET 2 OF 7
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY G. HEILMAN	DATE 1-03	TITLE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03		
		PART NO. 0700-901-010	REV. NONE

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NOTES:

FORM NO.
19fm009, Rev. NONE

SHEET
3 OF 7

stryker

INSTRUMENTS

4100 E. MILHAM KALAMAZOO, MI. 49001

DRAWN BY
G. HEILMAN

MFG APPROVAL
S/A. BEVERAGE

QA APPROVAL
S/S. HORVATH

DATE
1-03

DATE
2-03

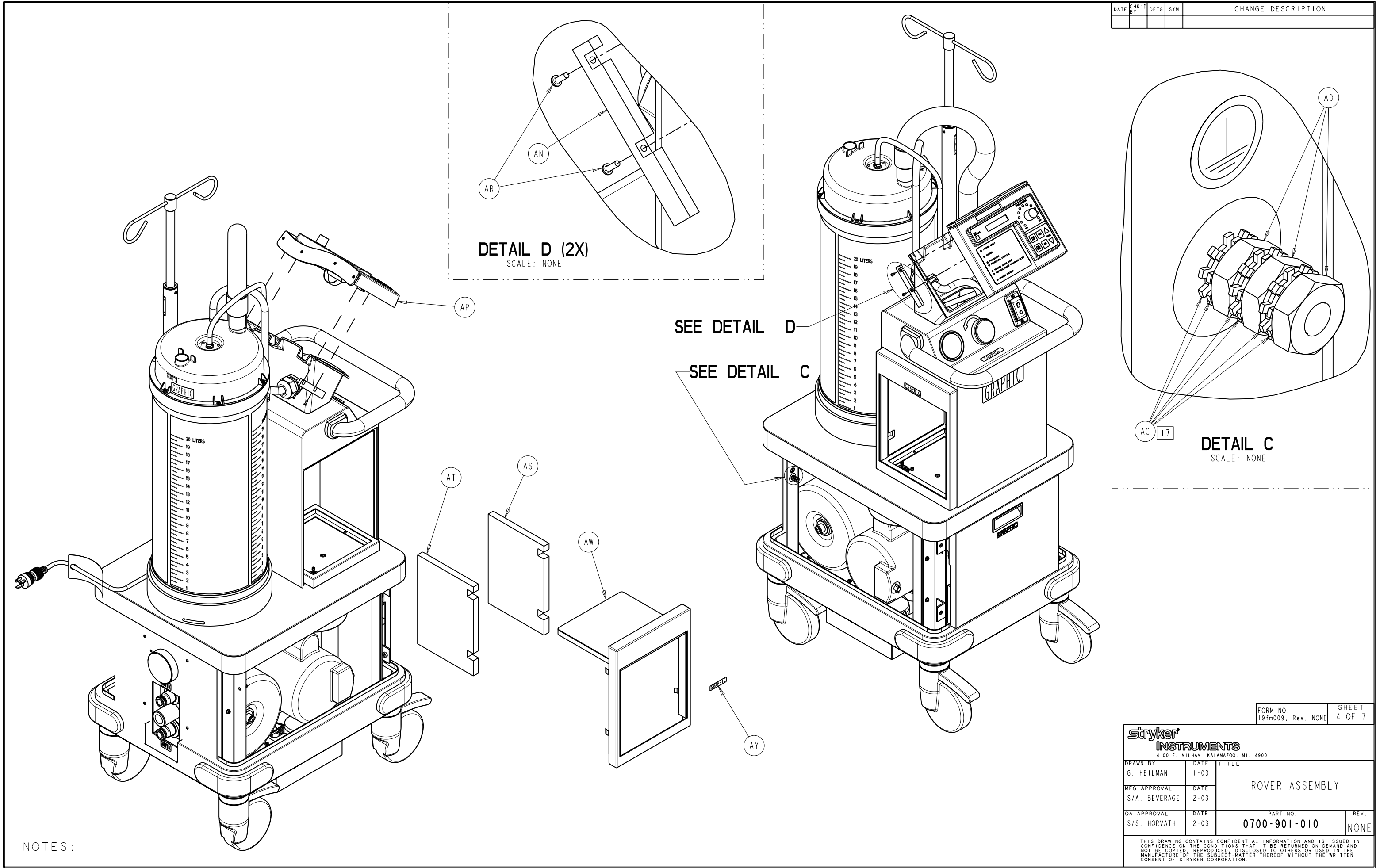
DATE
2-03

TITLE
ROVER ASSEMBLY

PART NO.
0700-901-010

REV.
NONE

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NOTES:

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

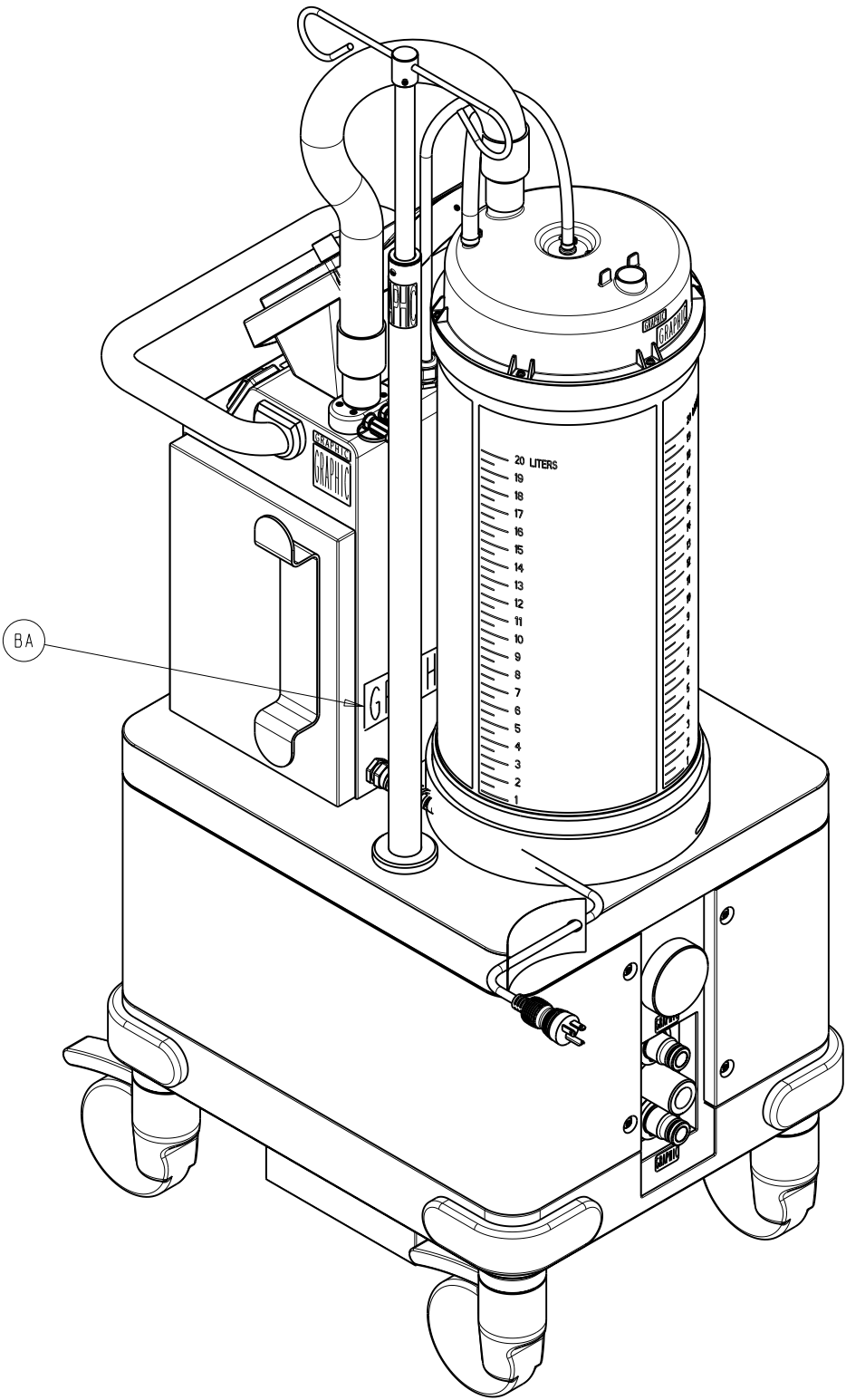
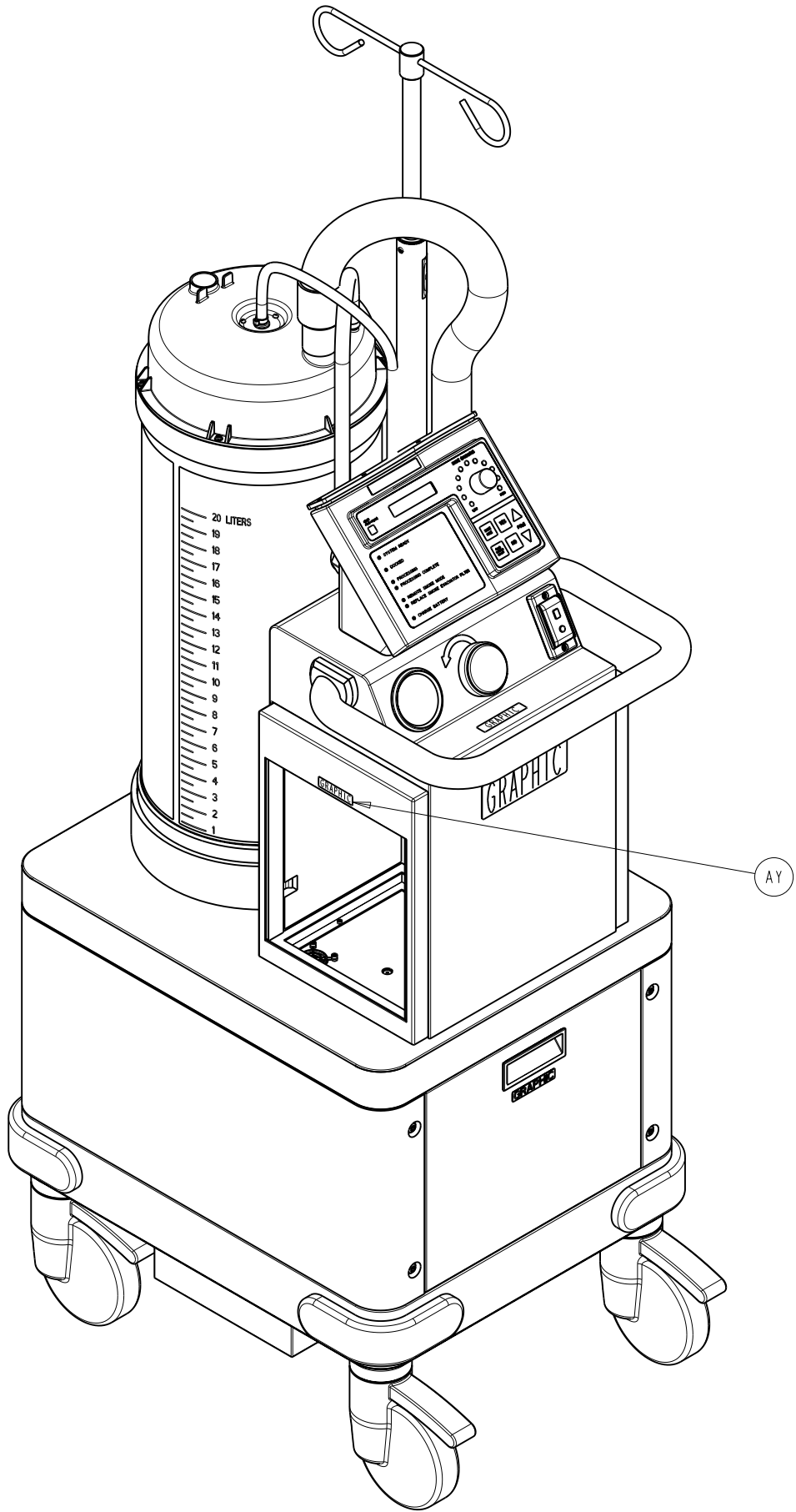
FORM NO.	SHEET
19fm009, Rev. NONE	4 OF 7

stryker INSTRUMENTS	
4100 E. MILHAM KALAMAZOO, MI. 49001	
DRAWN BY G. HEILMAN	DATE 1-03
MFG APPROVAL S/A. BEVERAGE	DATE 2-03
QA APPROVAL S/S. HORVATH	DATE 2-03

TITLE	PART NO.	REV.
ROVER ASSEMBLY	0700-901-010	NONE

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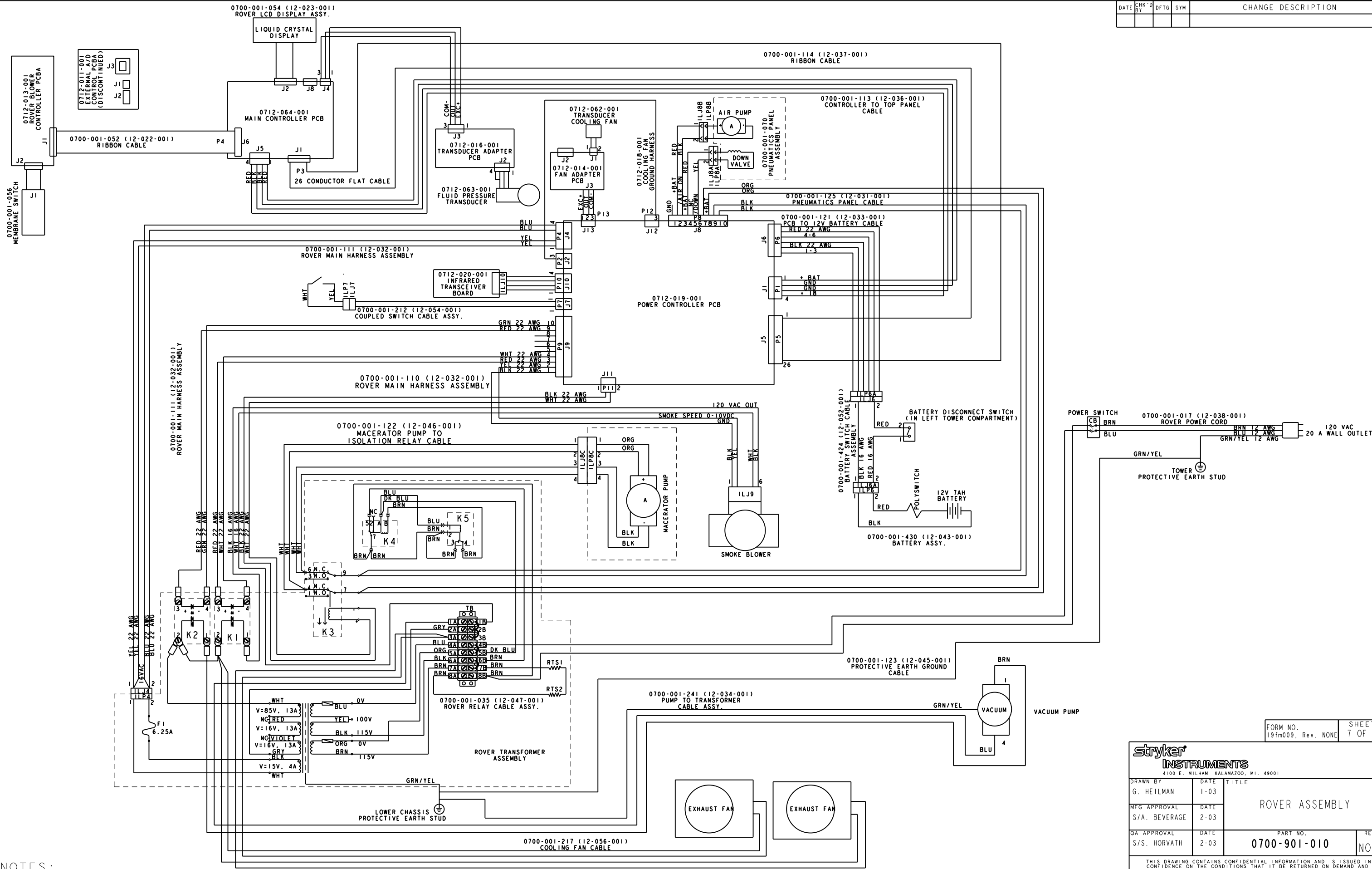


NOTES :

FORM NO. 19fm009, Rev. NONE	SHEET 5 OF 7
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY G. HEILMAN	DATE 1-03	TITLE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03		
		PART NO. 0700-901-010	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



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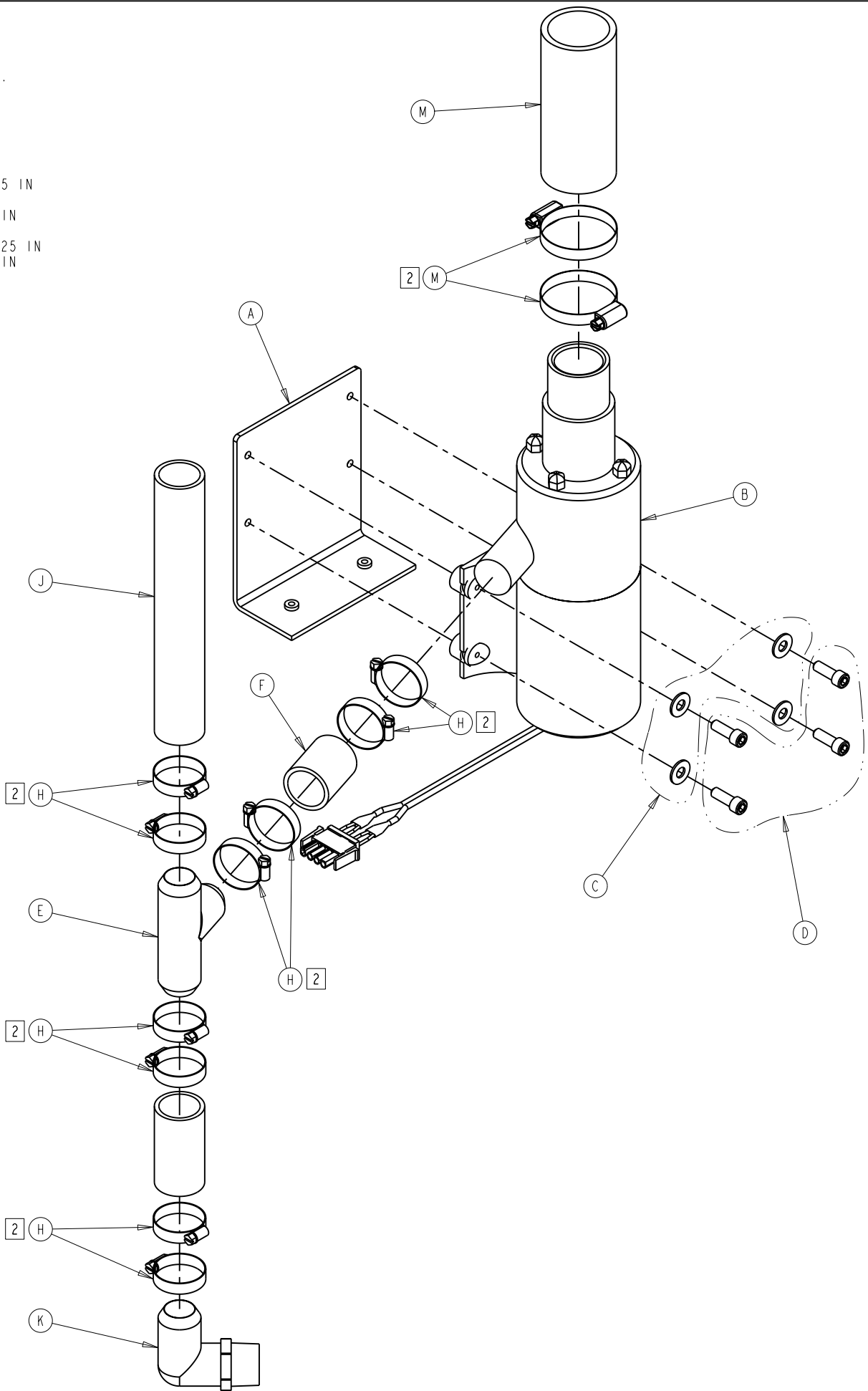
FORM NO. 191m009, Rev. NONE SHEET 7 OF 7

stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY G. HEILMAN	DATE 1-03	TITLE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03	PART NO. 0700-901-010	REV. NONE

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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

Item	Part No.	Part Name	Qty.
A	DISCONTINUED	MOUNTING BRACKET	1
B	0711-123-001	MACERATOR PUMP ASSEMBLY	1
C	0011-507-000	FLAT WASHER (1/4)	4
D	0004-518-000	SHCS 1/4-20 UNC-2A X 3/4	4
E	0731-105-006	BARBED HOSE TEE	1
F	0731-131-001	WIRE-REINFORCED PVC TUBING (1" ID X 1.29" OD)	2.5 IN
H	0058-326-000	HOSE CLAMP	10
J	0731-131-001	WIRE-REINFORCED PVC TUBING (1" ID X 1.29" OD)	8 IN
K	0731-105-004	HOSE BARB TO SWIVEL FITTING 90° ELBOW	1
L	0731-131-001	WIRE-REINFORCED PVC TUBING (1" ID X 1.29" OD)	2.25 IN
M	0731-143-001	BLACK SBR RUBBER HOSE (1-1/2" ID X 1-15/64" OD)	4 IN
N	0731-067-007	HOSE CLAMP	2



2 STAGGER HOSE CLAMPS SO THAT SCREWS ARE NOT LINED UP WITH EACH OTHER.

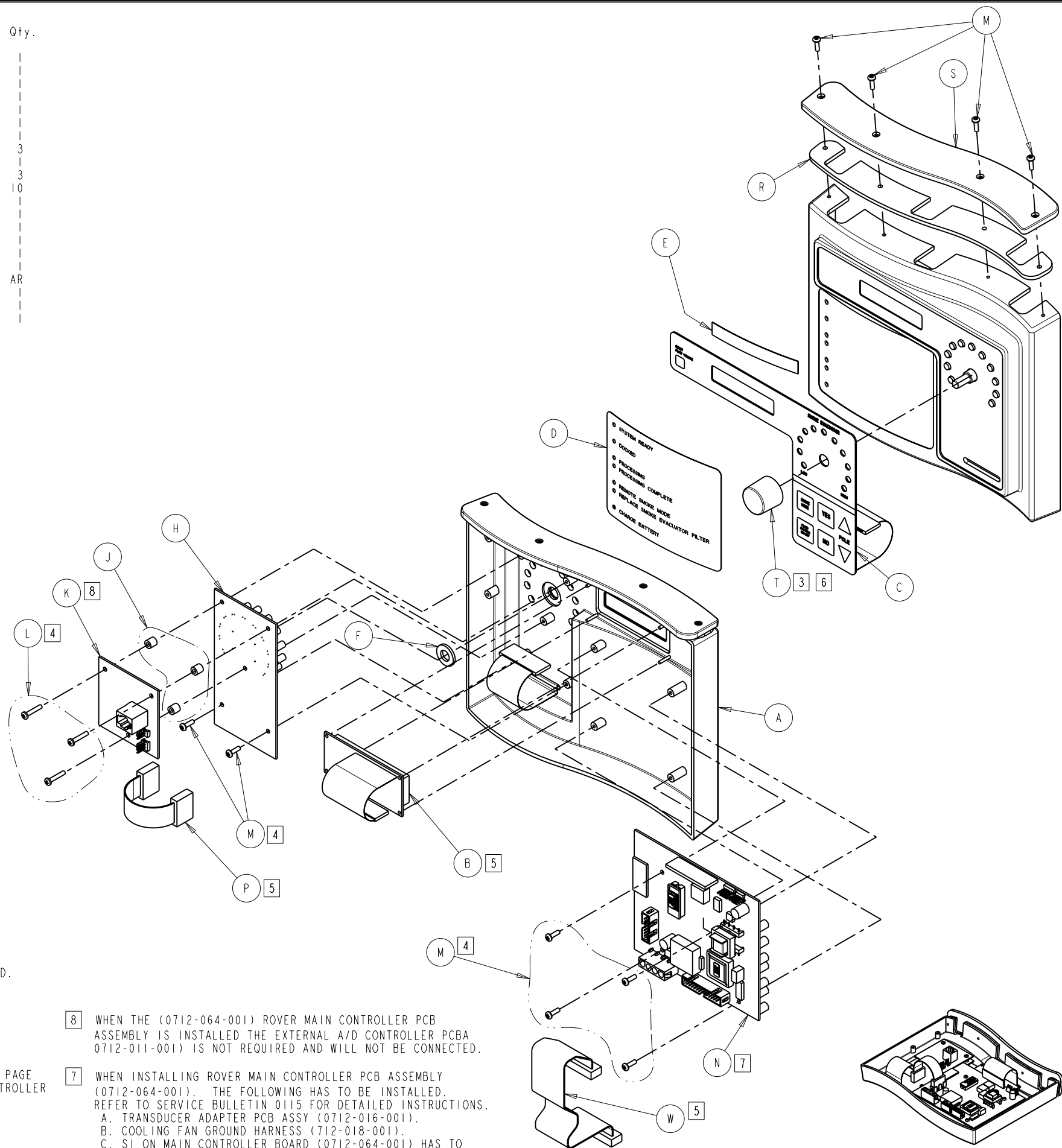
NOTES: 1. APPLIES TO ROVER MODEL 700-1 (PRESSURE TRANSDUCER ONLY).

FORM NO. 19im009, Rev. NONE	SHEET 1 OF 1
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stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY G. HEILMAN	DATE 1-03	TITLE MACERATOR PUMP / HOSE ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03	PART NO. 0700-901-020	REV. NONE

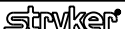
THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



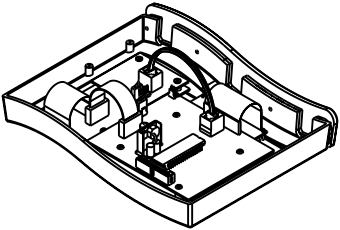
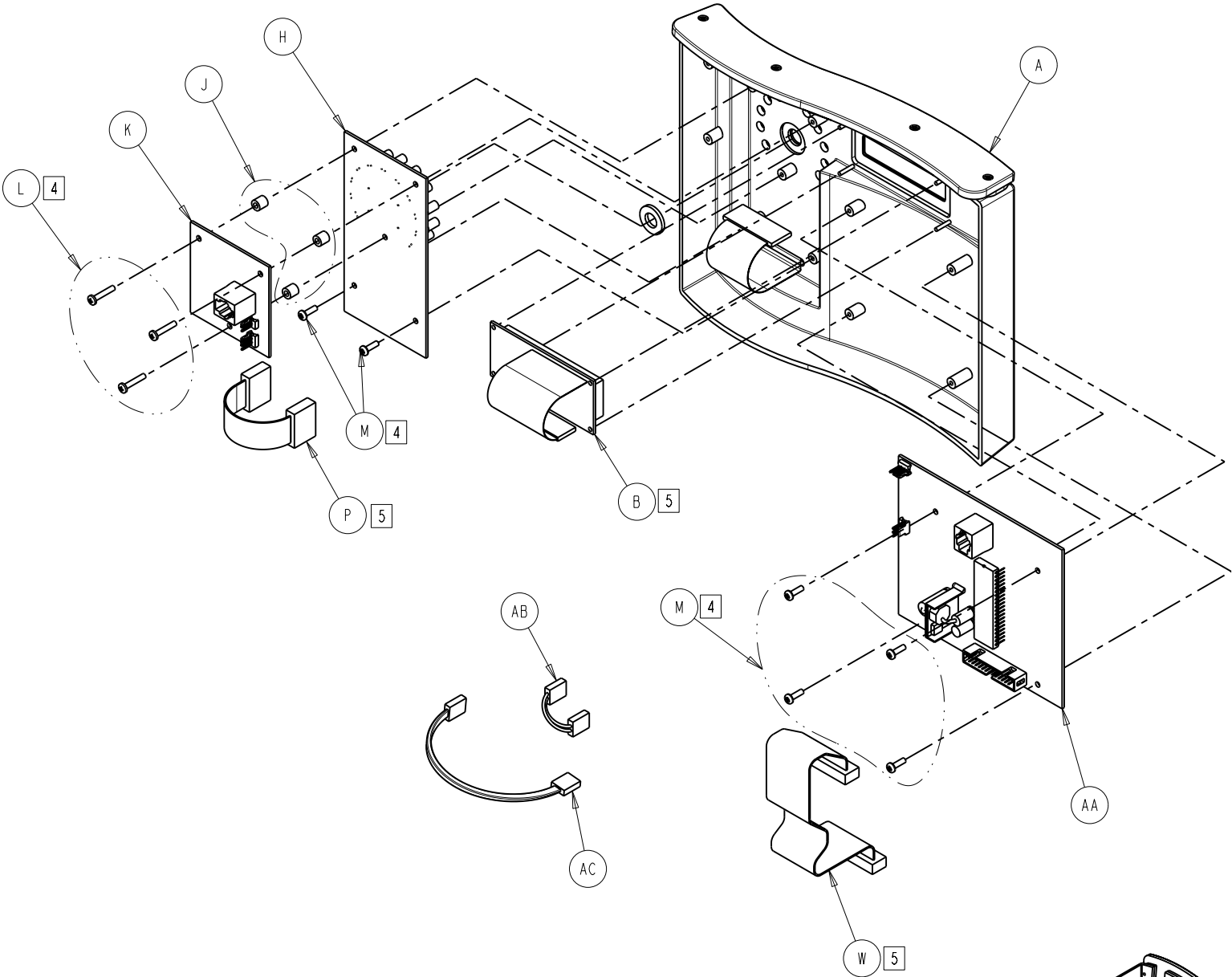
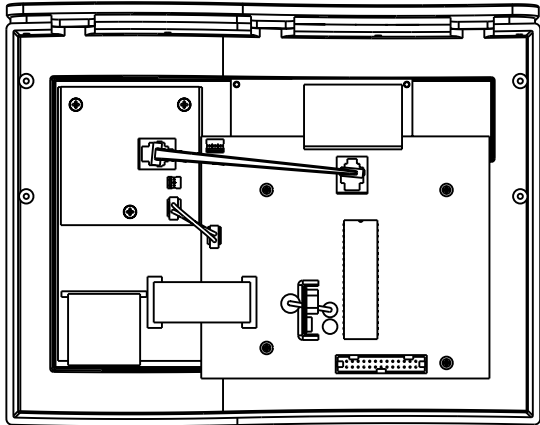
- 7 WHEN INSTALLING ROVER MAIN CONTROLLER PCB ASSEMBLY (0712-064-001). THE FOLLOWING HAS TO BE INSTALLED. REFER TO SERVICE BULLETIN 0115 FOR DETAILED INSTRUCTIONS.
- A. TRANSDUCER ADAPTER PCB ASSY (0712-016-001).
 - B. COOLING FAN GROUND HARNESS (712-018-001).
 - C. SI ON MAIN CONTROLLER BOARD (0712-064-001) HAS TO BE SWITCHED TOWARDS THE SMALL YELLOW TRANSFORMER (T1).

FORM NO. 19fm009, Rev. NONE	SHEET 1 OF 2
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 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY		DATE	TITLE
G. HEILMAN		1-03	USER INTERFACE PANEL
MFG APPROVAL		DATE	
S/A. BEVERAGE		2-03	
QA APPROVAL		DATE	PART NO.
S/S. HORVATH		2-03	0700-901-050
			REV.
			NONE

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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



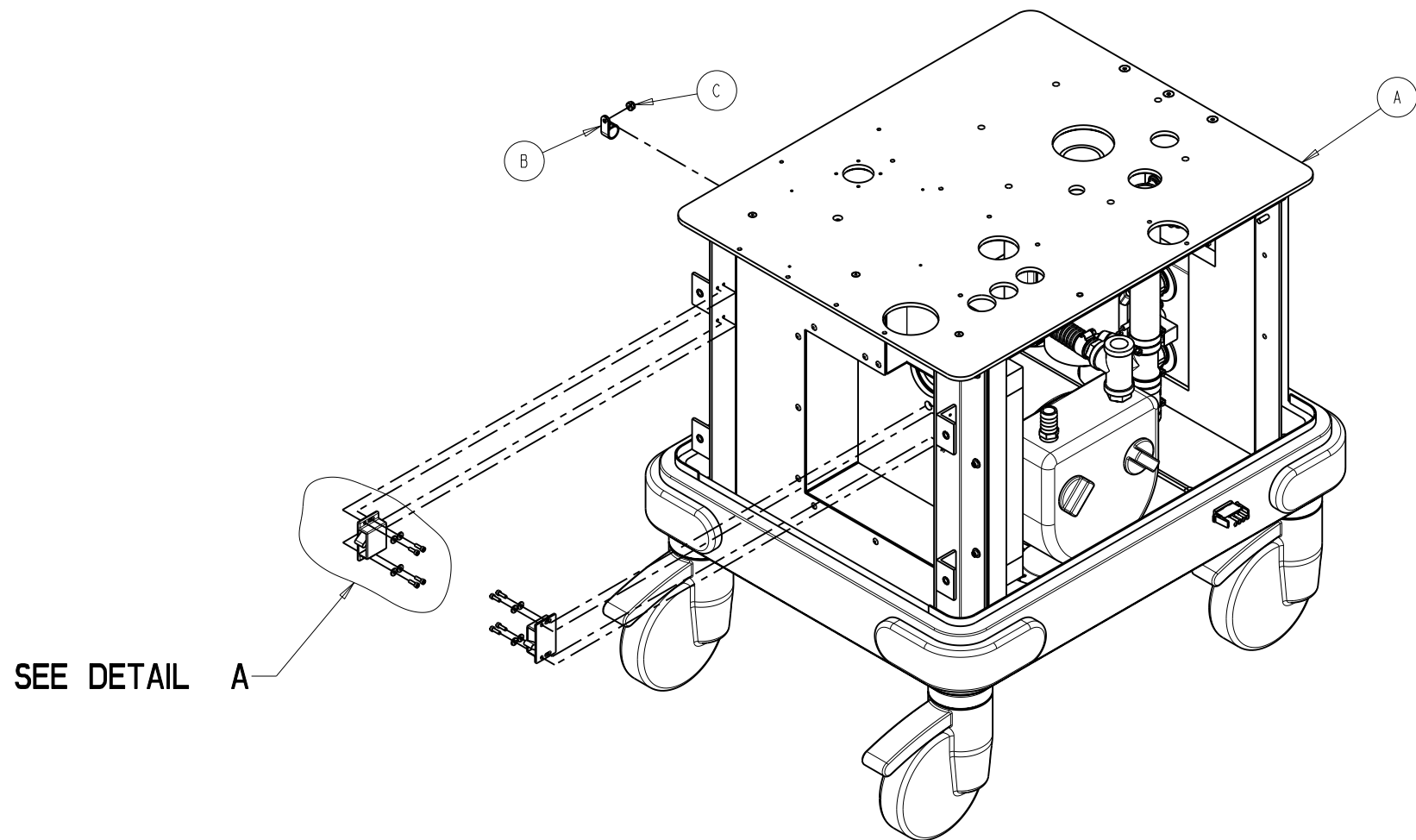
NOTES :

FORM NO. 19im009, Rev. NONE	SHEET 2 OF 2
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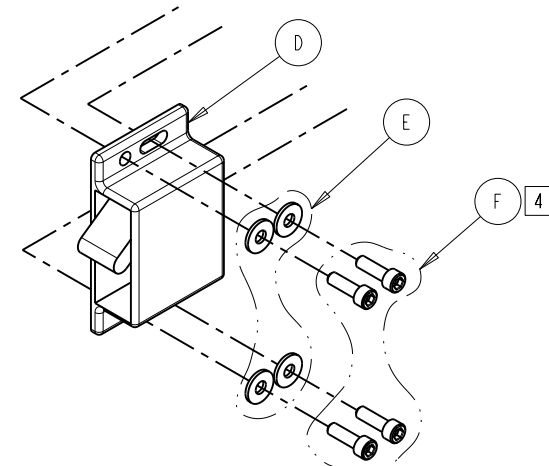
stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY G. HEILMAN	DATE 1-03	TITLE USER INTERFACE PANEL	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03	PART NO. 0700-901-050	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			

				DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION	
Item	Part No.	Part Name	Qty.	Item	Part No.	Part Name	Qty.		
A	DISCONTINUED	CHASSIS ASSEMBLY	1	BH	0058-338-000	NYLON LOOP STRAP	3		
B	0058-333-000	NYLON LOOP CLAMP	1	BJ	0016-025-000	LOCKNUT, NYLON INSERT 10-32	3		
C	0016-320-000	LOCKNUT, NYLON INSERT 6-32	1	BK	0045-267-000	O-RING	1		
D	0700-001-126	SLAM ACTION LATCH	2	BL	0711-027-001	CANISTER CAP ASSEMBLY	1		
E	0011-052-000	FLAT WASHER (#4)	14	BM	0004-546-000	SHCS 4-40 X 1/2	6		
F	0004-540-000	SHCS 4-40 X 3/8	8	BN	0060-011-000	BRAIDED TUBING 1/4" ID	57 IN		
H	DISCONTINUED	UPPER SKIRT	1	BP	0058-327-000	HOSE CLAMP	2		
J	0700-001-128	SOUND DAMPENING FOAM	1	BR	0700-001-160	SILENCER MANIFOLD ASSEMBLY	1		
K	0731-028-008	BUSHING	1	BS	0011-512-000	FLAT WASHER (#10)	2		
L	0731-028-007	BUSHING	1	BT	0012-014-000	SPLIT LOCK WASHER #10	2		
M	0058-319-000	BUSHING	1	BW	0004-526-000	SHCS 10-32 X 1/2	2		
N	0058-320-000	BUSHING	2	BY	0731-075-001	TUBING, REFERENCE TUBE	48 IN		
P	0058-321-000	BUSHING	1	CA	0058-325-000	HOSE CLAMP	2		
R	0700-001-218	SNAP BUSHING, MODIFIED	1	CB	0058-323-000	HOSE CLAMP	3		
S	0700-901-310	PRESSURE TRANSDUCER / CANISTER ASSEMBLY	1	CC	0731-066-020	BARBED FITTING (SWIVEL)	2		
T	0731-067-007	HOSE CLAMP	2	CD	0731-066-019	BARBED FITTING (ELBOW)	2		
W	0058-326-000	HOSE CLAMP	2	CE	0048-218-000	HEX PIPE FITTING	1		
Y	0011-507-000	FLAT WASHER (1/4)	5	CF	0048-214-000	PIPE FITTING ELBOW 3/8	1		
AA	0700-001-119	SILENCER MANIFOLD MOUNTING BRACKET	1	CH	0700-001-131	VACUUM RELIEF VALVE	1		
AB	0058-336-000	LOOP STRAP, RUBBER CUSHIONED	1	CJ	0060-014-000	WIRE REINFORCED TUBING	8 IN		
AC	0731-011-049	SHCS 1/4-20 X 2-3/4	6	CK	0058-328-000	HOSE CLAMP	2		
AD	0700-001-111	ROVER MAIN HARNESS ASSY	1	CL	0700-001-117	VACUUM HOSE	1		
AE	0700-001-113	CONTROLLER TO TOP PANEL CABLE	1	CM	0700-027-001	VACUUM HOSE FOAM	1		
AF	0700-001-121	PCB TO 12V BATTERY CABLE	1	CN	0058-339-000	HOSE CLAMP	1		
AH	0700-001-122	MACERATOR PUMP TO ISOLATION RELAY CABLE	1	CP	0731-152-003	ONE EAR HOSE CLAMP	1		
AJ	0700-001-123	PROTECTIVE EARTH GROUND CABLE	1	CR	0700-001-150	EXHAUST PLENUM ASSEMBLY	1		
AK	0700-001-124	TRANSFORMER TO CIRCUIT BREAKER CABLE	1	CS	0004-004-000	SHCS 8-32 X 1/4	6		
AL	0700-001-125	PNEUMATICS PANEL CABLE ASSEMBLY	1	CT	0700-901-145	TOWER RIGHT PANEL ASSEMBLY	1		
AM	0700-901-410	TOWER ASSEMBLY	1	CW	0700-001-135	SIDE PANEL ASSEMBLY	2		
AN	0013-018-000	LOCK WASHER #10 EXTERNAL	2	CY	0004-552-000	BHCS 1/4-20 X 1-1/2	4		
AP	0004-535-000	SHCS 10-32 X 3/8	8	DA	0004-551-000	BHCS 1/4-20 X 3/4	4		
AR	0058-335-000	LOOP STRAP, RUBBER CUSHIONED	1	DB	0280-004-097	POWER CORD WARNING LABEL	1		
AS	0011-511-000	FLAT WASHER (#10)	1	DC	0044-049-000	TEFLON TAPE, 1/2"	AR	(NOT SHOWN)	
AT	0004-521-000	SHCS 10-32 X 5/8	1	DD	0072-002-003	LOCTITE 222	AR	(NOT SHOWN)	
AW	0058-334-000	ADHESIVE CABLE MOUNT	7	DE	0072-002-061	RTV 108	AR	(NOT SHOWN)	
AY	0700-001-430	ROVER BATTERY ASSEMBLY	1	DF	0072-002-032	RTV 162	AR	(NOT SHOWN)	
BA	0712-014-001	FAN ADAPTER PCB	1	DH	0034-409-000	SLIT-CONVOLUTED CONDUIT	7.5 IN	(NOT SHOWN)	
BB	0712-016-001	TRANSDUCER ADAPTER PCB	1	DJ	0058-342-000	WIRE TIE	1	(NOT SHOWN)	
BC	0712-018-001	COOLING FAN GROUND HARNESS	1	DK	0072-002-056	LOCTITE 425	AR	(NOT SHOWN)	
BD	0700-027-000	FLUID SUCTION HEPA FILTER ASSEMBLY	0.25						
BE	0700-001-116	VACUUM HOSE	1						
BF	0700-001-190	FRONT PANEL ASSEMBLY	1						

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



SEE DETAIL A

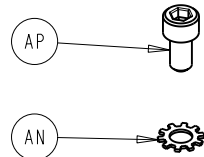


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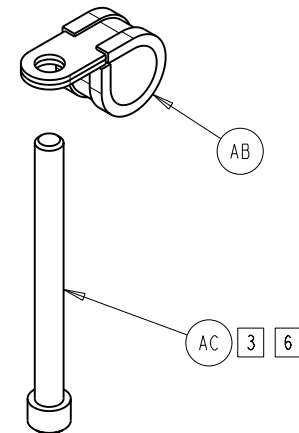
NOTES:

FORM NO. 191m009, Rev. NONE	SHEET 2 OF 5
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY G. HEILMAN	DATE 1-14-03	TITLE BASE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03		
		PART NO. 0700-901-110	REV. NONE
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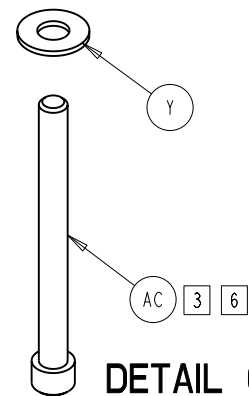
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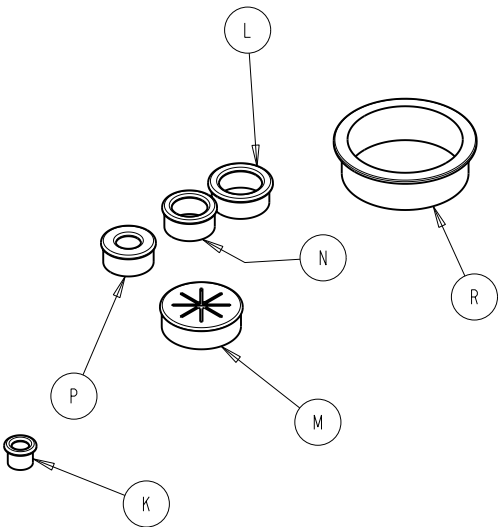
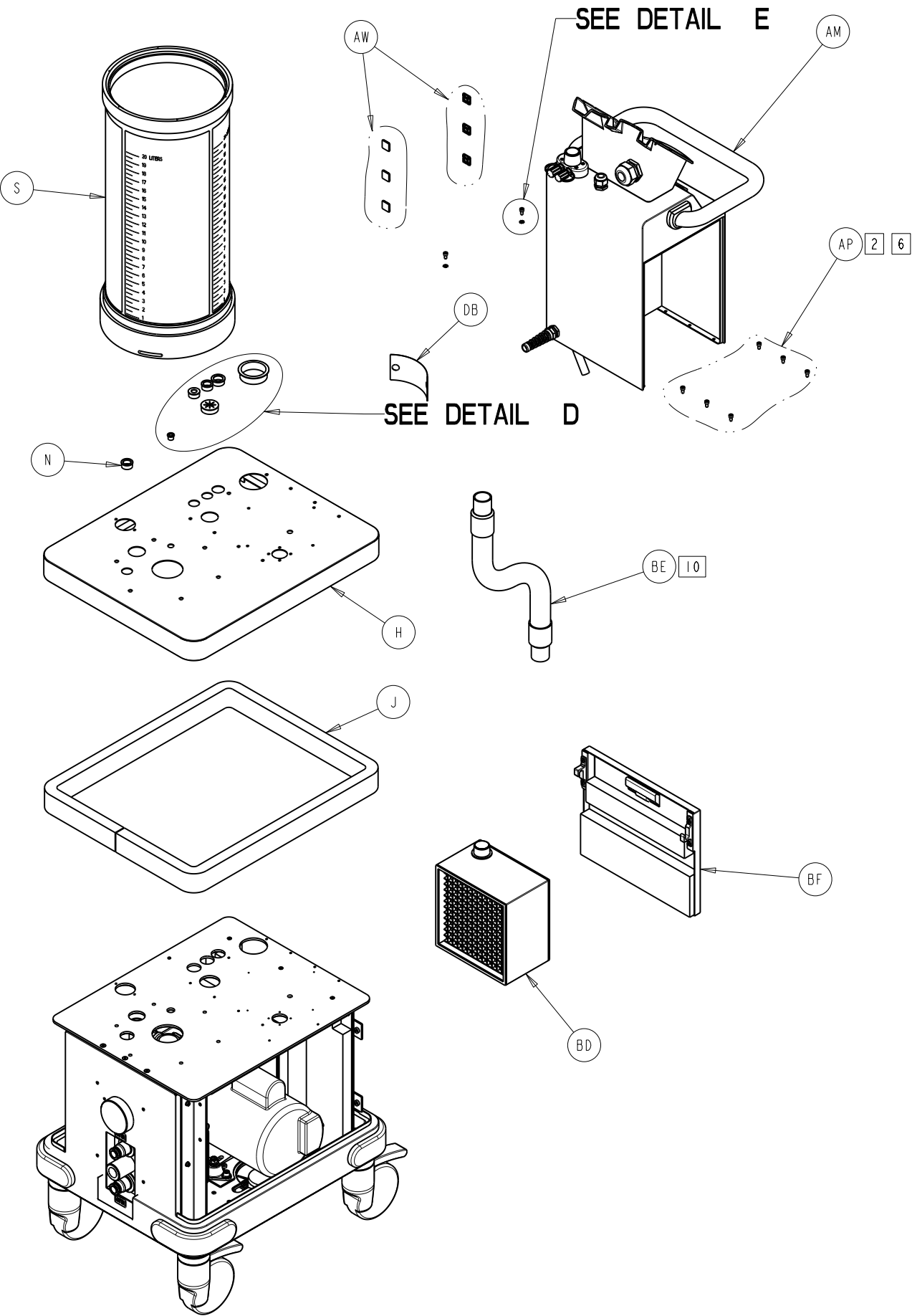
DETAIL B
SCALE: NONE

SEE DETAIL B

SEE DETAIL C



DETAIL C (5X)
SCALE: NONE



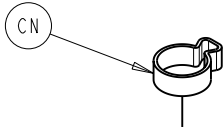
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NOTES:

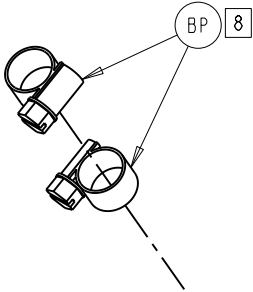
DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

FORM NO. 19fm009, Rev. NONE		SHEET 3 OF 5	
stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY G. HEILMAN	DATE 1-14-03	TITLE BASE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03	PART NO. 0700-901-110	REV. NONE
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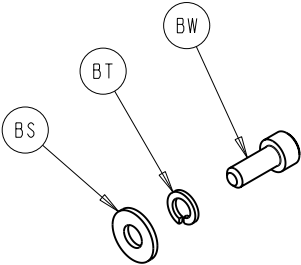
DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



DETAIL F
SCALE: NONE



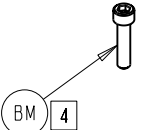
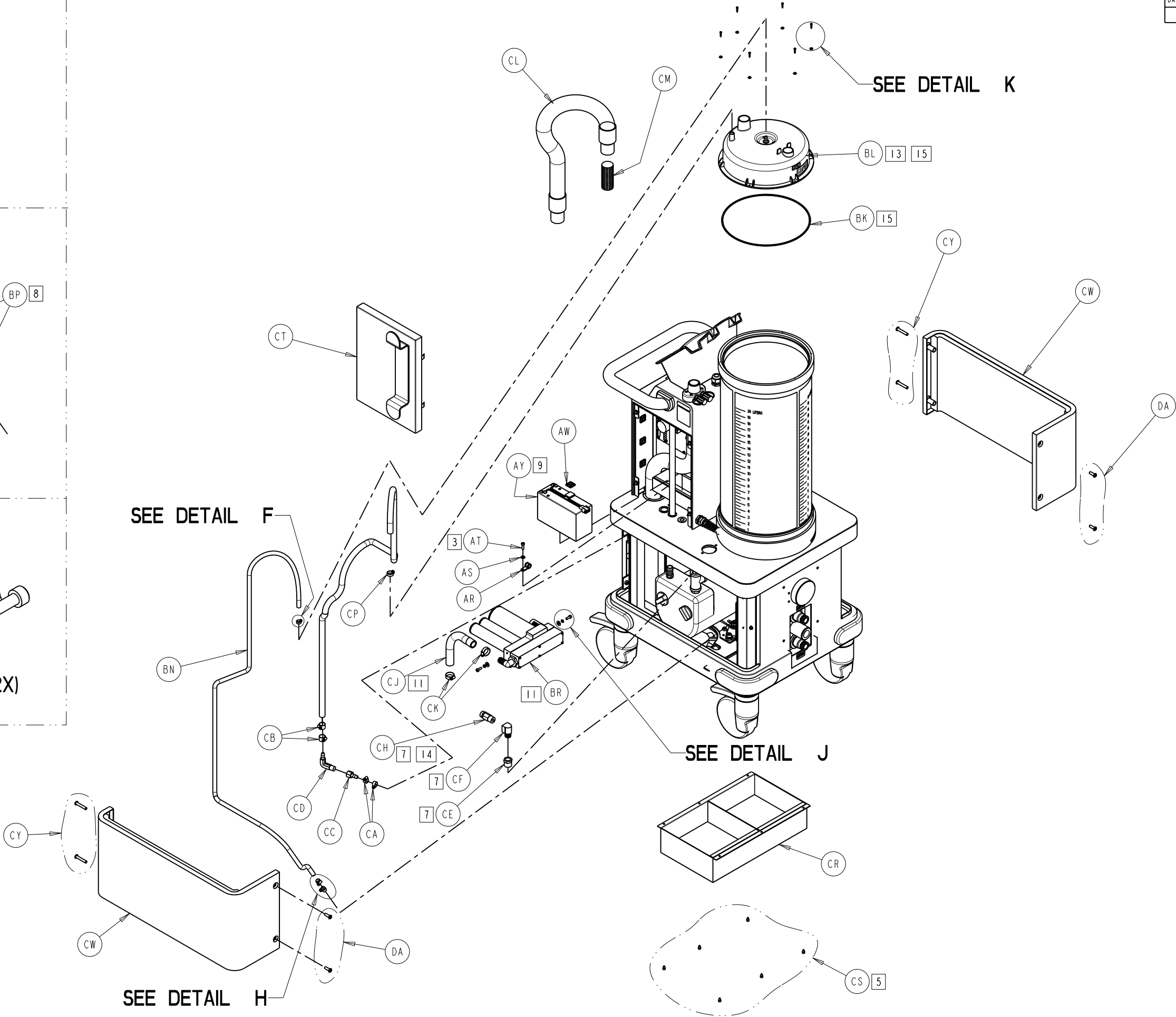
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SCALE: NONE



DETAIL J (2X)
SCALE: NONE

NOTES:

SEE DETAIL H



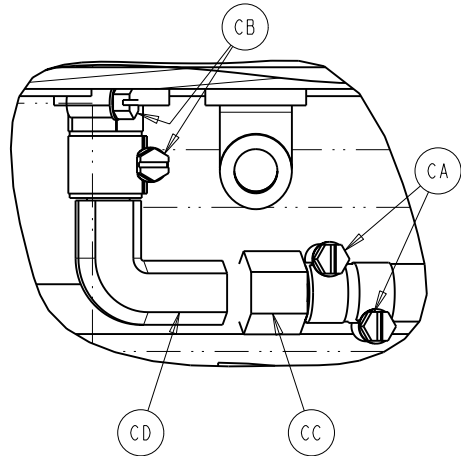
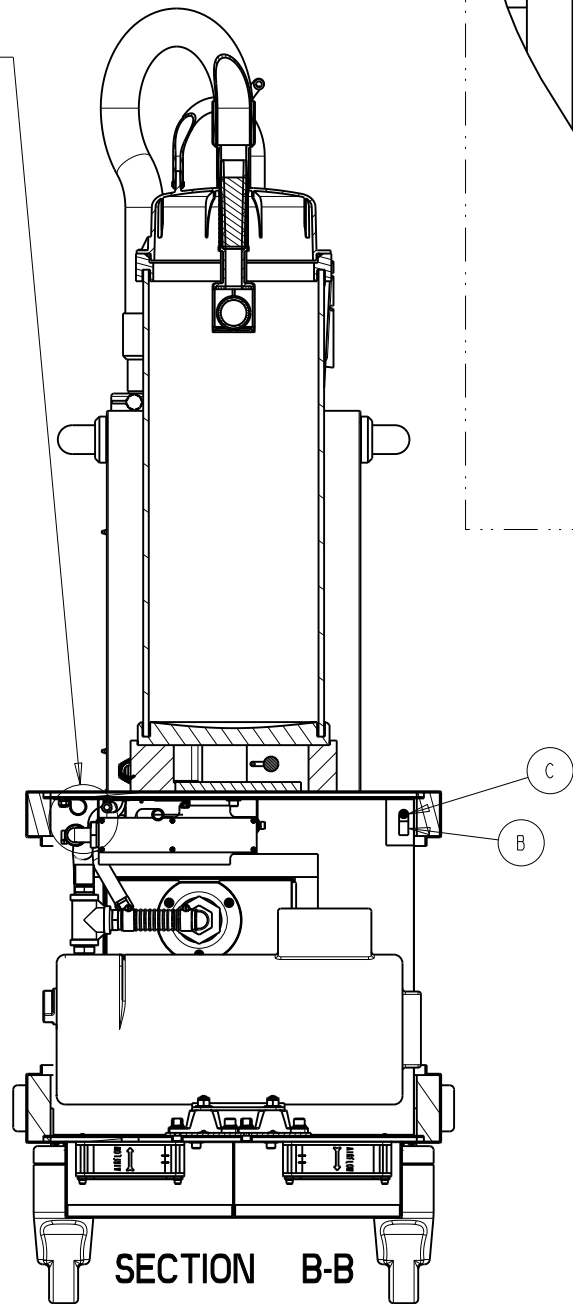
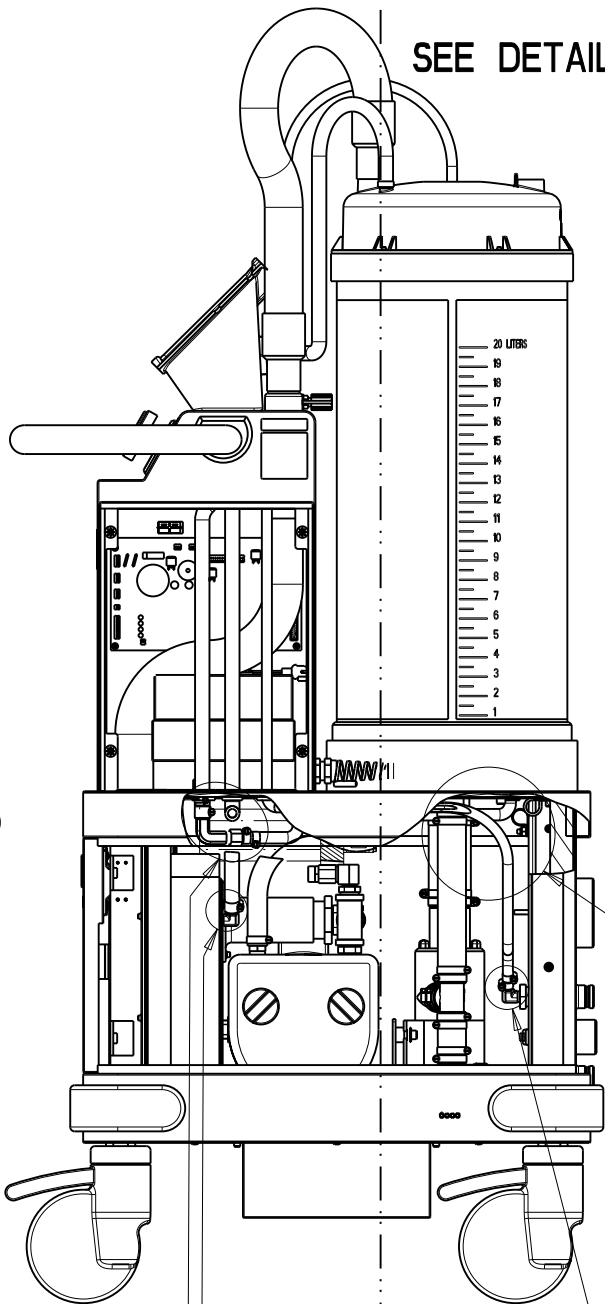
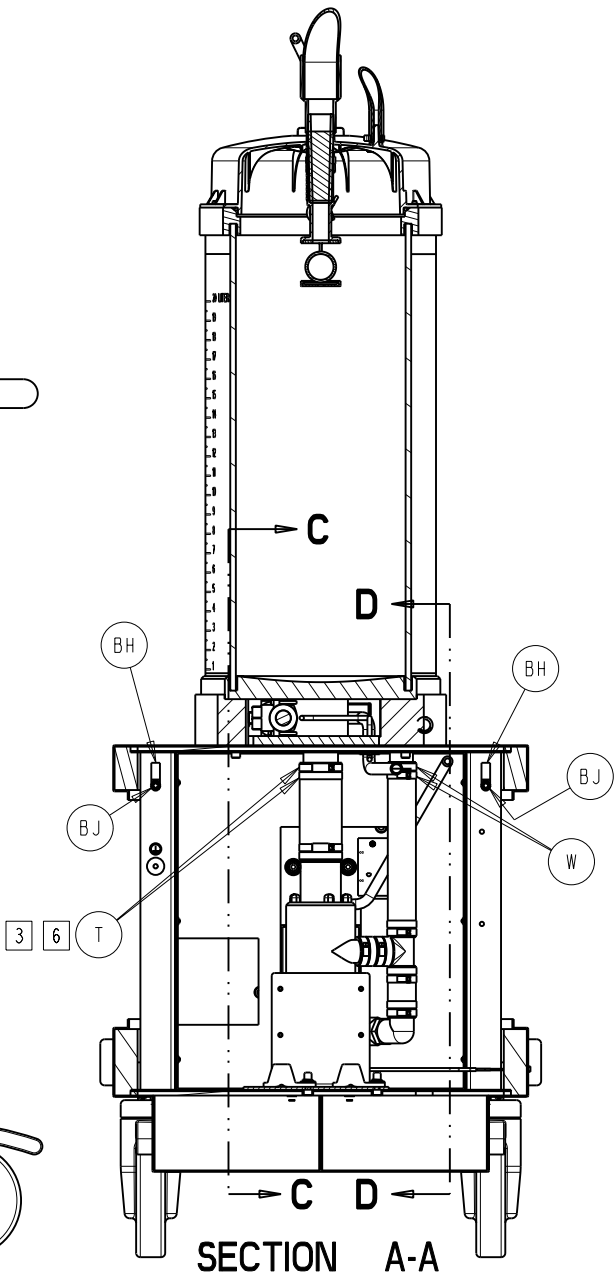
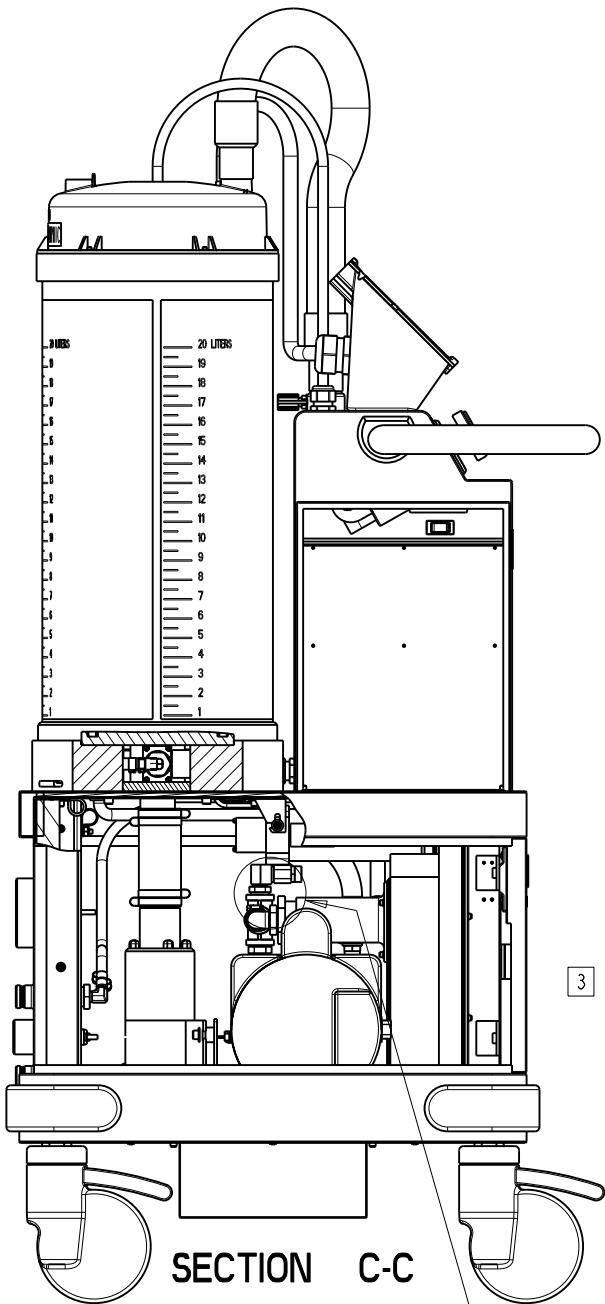
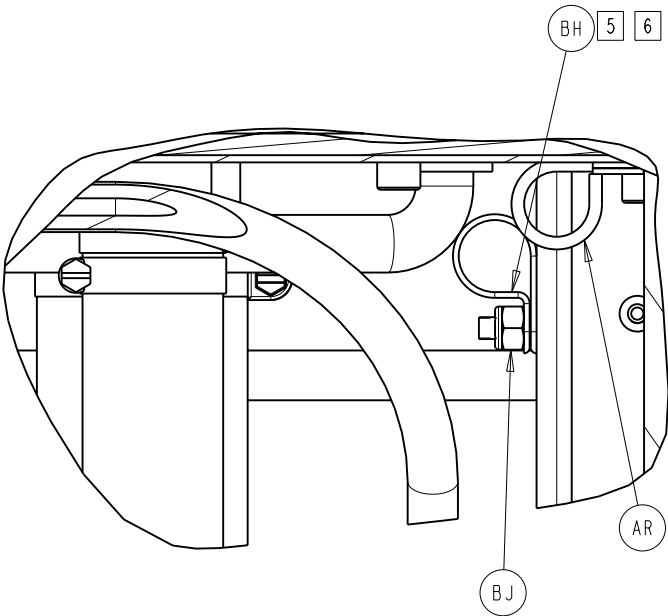
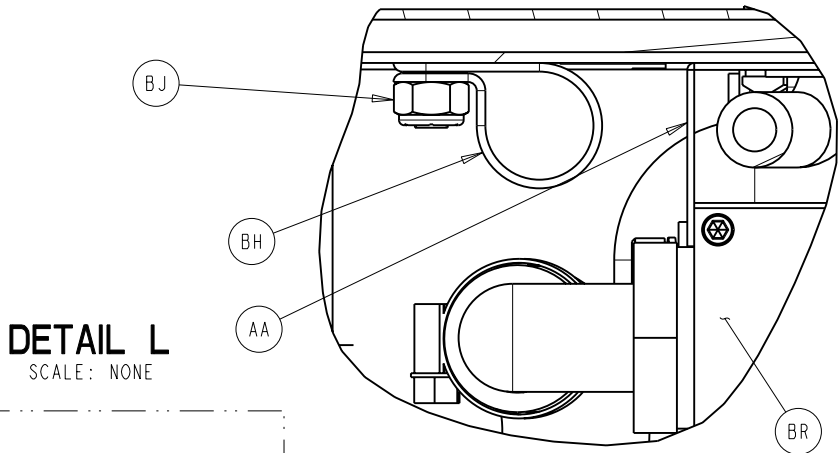
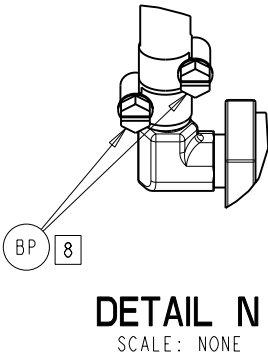
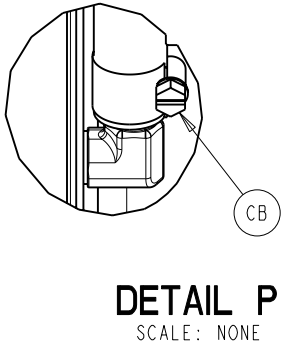
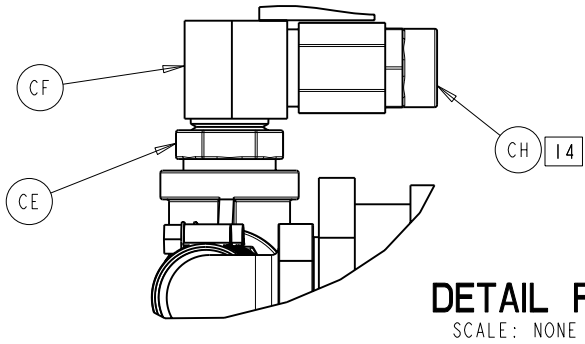
DETAIL K (6X)
SCALE: NONE

FORM NO. 191m009, Rev. NONE	SHEET 4 OF 5
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY G. HEILMAN	DATE 1-14-03	TITLE BASE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03	PART NO. 0700-901-110	REV. NONE

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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



NOTES:

SEE DETAIL R

SEE DETAIL S
SEE DETAIL P

SECTION D-D

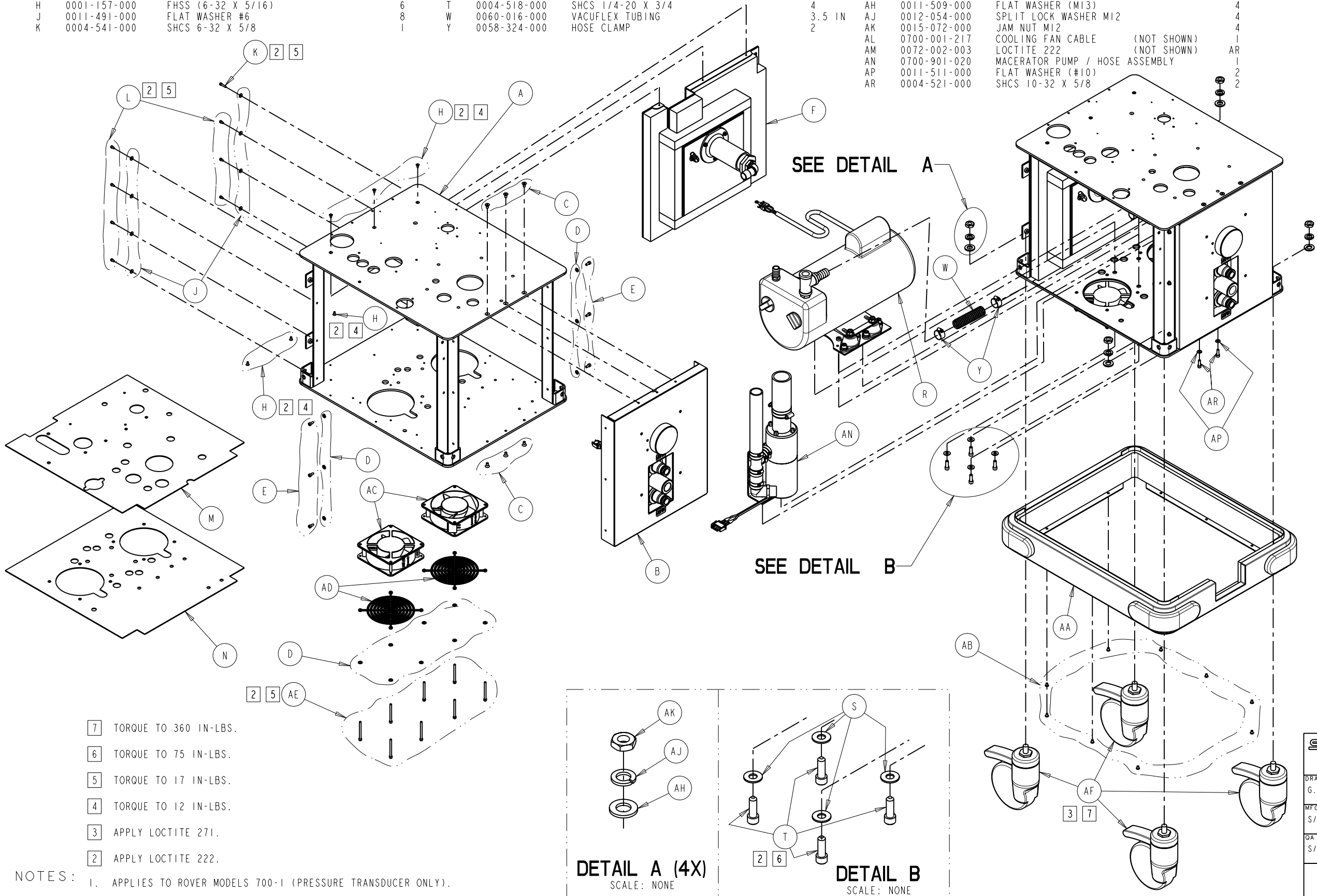
SEE DETAIL M
SEE DETAIL N

stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001		FORM NO. 191m009, Rev. NONE	SHEET 5 OF 5
DRAWN BY G. HEILMAN	DATE 1-14-03	BASE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03	PART NO. 0700-901-110	REV. NONE

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Item	Part No.	Part Name	Qty.	Item	Part No.	Part Name	Qty.	Item	Part No.	Part Name	Qty.
A	DISCONTINUED	CHASSIS WELDMNT	1	L	0004-022-000	SHCS 6-32 X 1/4	7	AA	0700-001-270	LOWER SKIRT ASSEMBLY	1
B	0700-901-220	FLUID INTERFACE PANEL ASSEMBLY	1	M	DISCONTINUED	VIBRATION DAMPENING SHEET	1	AB	0004-548-000	SBHCS 8-32 X 1/4	10
C	0001-158-000	FHSS (10-24 X 3/8)	6	N	0700-001-213	VIBRATION DAMPENING SHEET	1	AC	0700-001-215	COOLING FAN	2
D	0011-510-000	FLAT WASHER (#8)	14	P	0036-046-000	LABEL, PROTECTIVE EARTH (GRD.)	1	AD	0700-001-216	FINGER GUARD	2
E	0004-525-000	SHCS 8-32 X 3/8	6	R	0700-001-240	VACUUM PUMP ASSEMBLY	1	AE	0004-539-000	SHCS 8-32 X 2	8
F	0700-001-250	HEPA FILTER PLENUM ASSEMBLY	1	S	0011-507-000	FLAT WASHER (1/4)	4	AF	0700-001-214	5" CASTER	4
H	0001-157-000	FHSS (6-32 X 5/16)	6	T	0004-518-000	SHCS 1/4-20 X 3/4	4	AH	0011-509-000	FLAT WASHER (M13)	4
J	0011-491-000	FLAT WASHER #6	8	W	0060-016-000	VACUFLEX TUBING	3.5 IN	AJ	0012-054-000	SPLIT LOCK WASHER M12	4
K	0004-541-000	SHCS 6-32 X 5/8	1	Y	0058-324-000	HOSE CLAMP	2	AK	0015-072-000	JAM NUT M12	4
								AL	0700-001-217	COOLING FAN CABLE (NOT SHOWN)	1
								AM	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR
								AN	0700-901-020	MACERATOR PUMP / HOSE ASSEMBLY	1
								AP	0011-511-000	FLAT WASHER (#10)	2
								AR	0004-521-000	SHCS 10-32 X 5/8	2

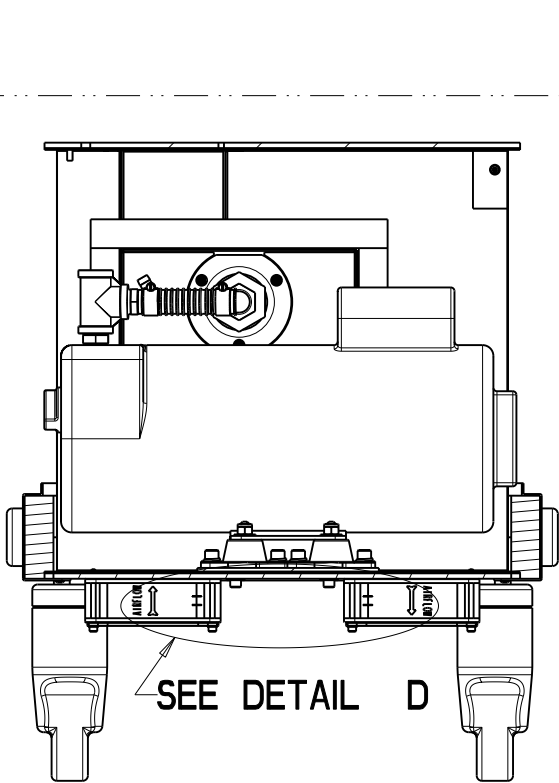
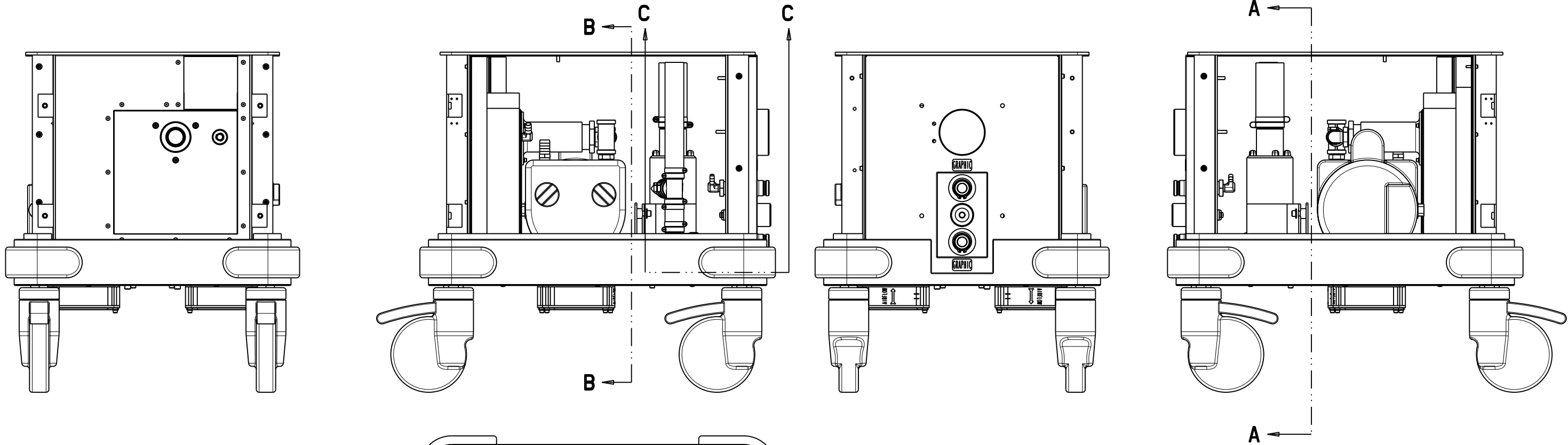
DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



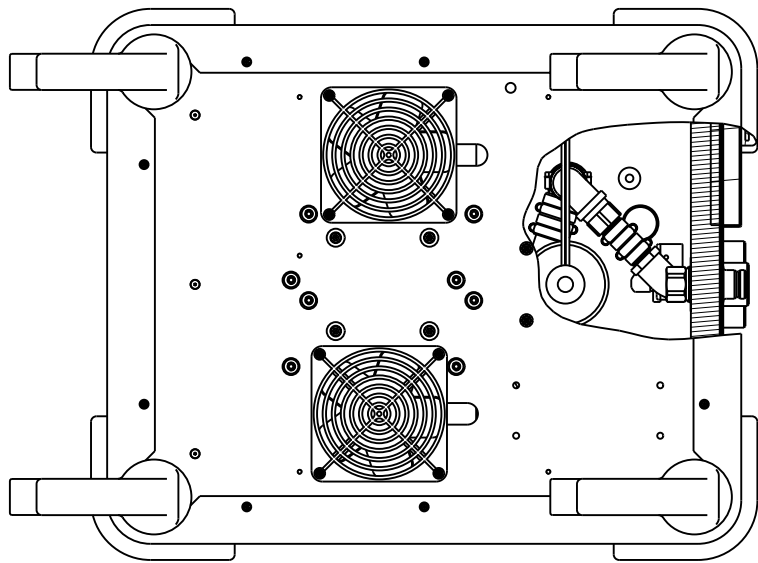
FORM NO. 191m009, Rev. NONE	SHEET 1 OF 2
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY G. HEILMAN	DATE 1-03	TITLE CHASSIS ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-901-210	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



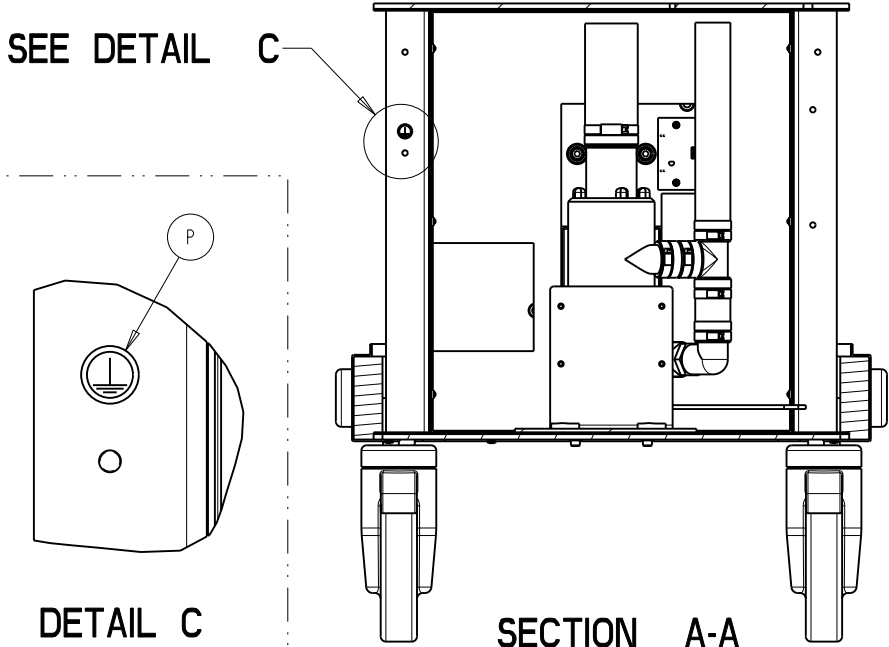
SECTION B-B



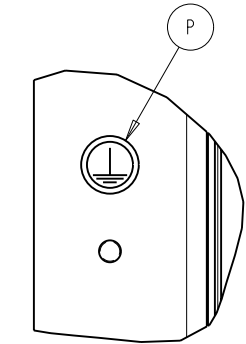
SECTION C-C



DETAIL D
SCALE: NONE



SECTION A-A



DETAIL C
SCALE: NONE

NOTES:

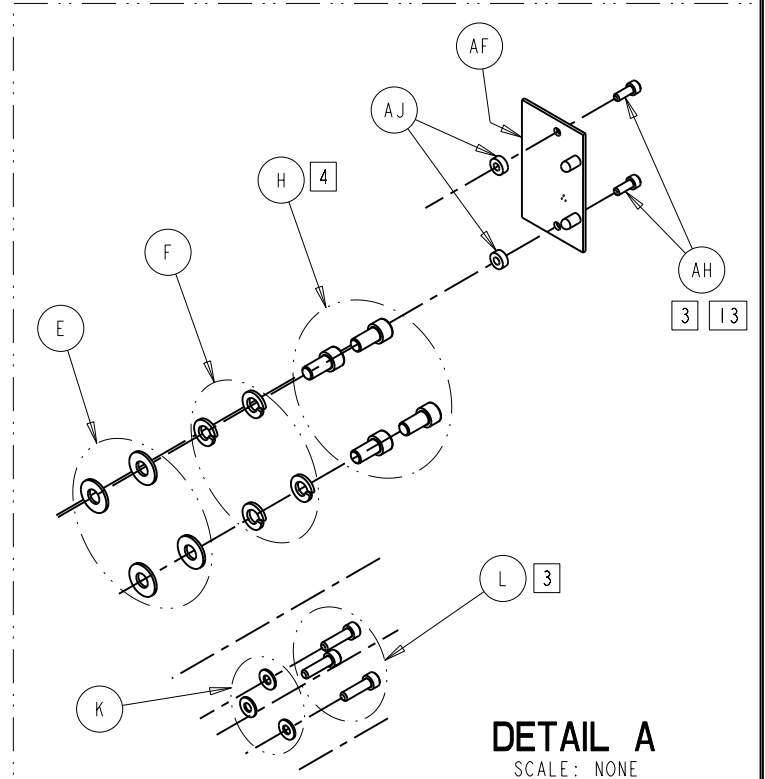
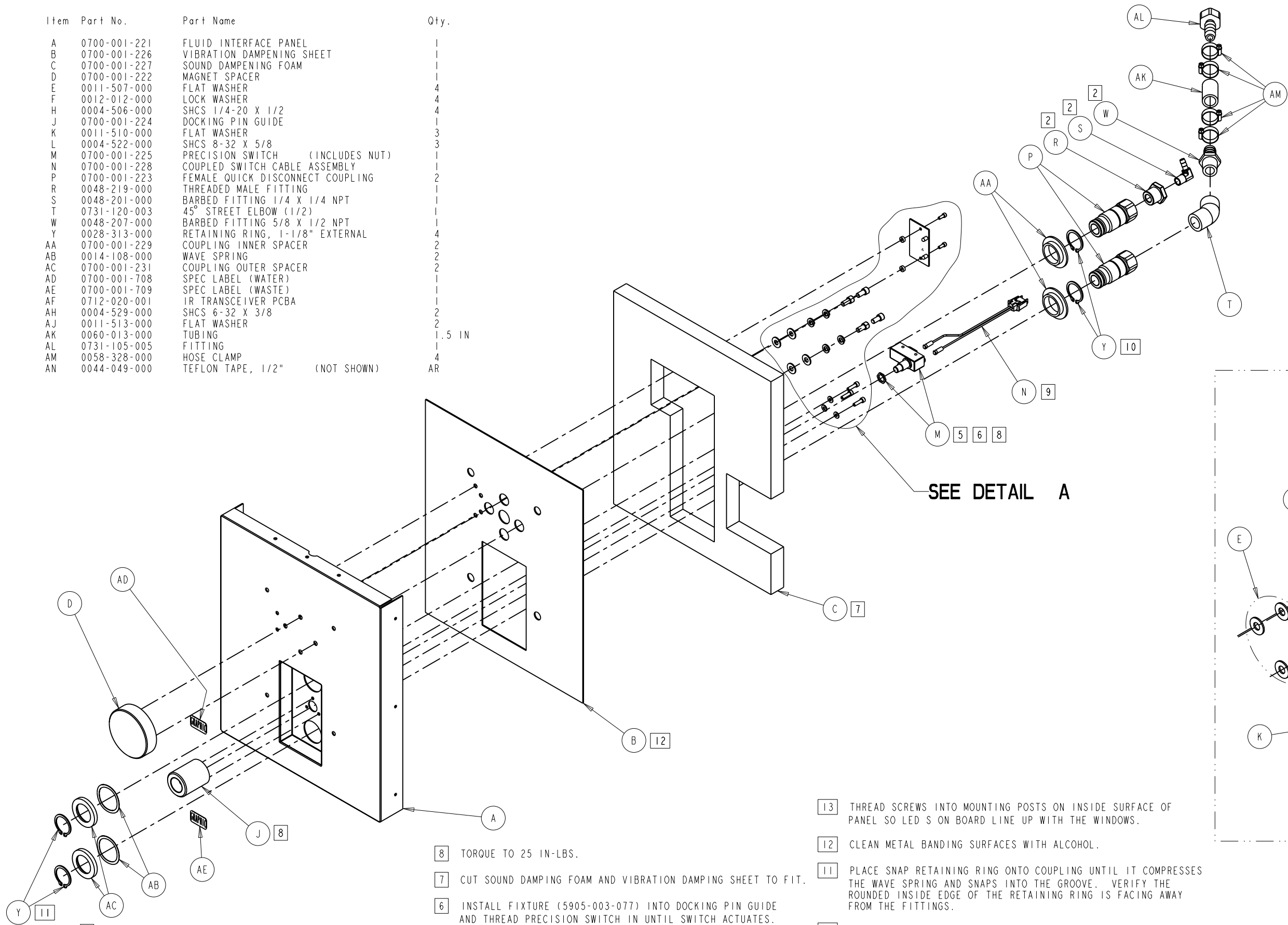
FORM NO. 19fm009, Rev. NONE	SHEET 2 OF 2
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY G. HEILMAN	DATE 1-03	TITLE CHASSIS ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-901-210	REV. NONE

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Item	Part No.	Part Name	Qty.
A	0700-001-221	FLUID INTERFACE PANEL	1
B	0700-001-226	VIBRATION DAMPENING SHEET	1
C	0700-001-227	SOUND DAMPENING FOAM	1
D	0700-001-222	MAGNET SPACER	1
E	0011-507-000	FLAT WASHER	4
F	0012-012-000	LOCK WASHER	4
H	0004-506-000	SHCS 1/4-20 X 1/2	4
J	0700-001-224	DOCKING PIN GUIDE	1
K	0011-510-000	FLAT WASHER	3
L	0004-522-000	SHCS 8-32 X 5/8	3
M	0700-001-225	PRECISION SWITCH (INCLUDES NUT)	1
N	0700-001-228	COUPLED SWITCH CABLE ASSEMBLY	1
P	0700-001-223	FEMALE QUICK DISCONNECT COUPLING	2
R	0048-219-000	THREADED MALE FITTING	1
S	0048-201-000	BARBED FITTING 1/4 X 1/4 NPT	1
T	0731-120-003	45° STREET ELBOW (1/2)	1
W	0048-207-000	BARBED FITTING 5/8 X 1/2 NPT	1
Y	0028-313-000	RETAINING RING, 1-1/8" EXTERNAL	4
AA	0700-001-229	COUPLING INNER SPACER	2
AB	0014-108-000	WAVE SPRING	2
AC	0700-001-231	COUPLING OUTER SPACER	2
AD	0700-001-708	SPEC LABEL (WATER)	1
AE	0700-001-709	SPEC LABEL (WASTE)	1
AF	0712-020-001	IR TRANSCEIVER PCBA	1
AH	0004-529-000	SHCS 6-32 X 3/8	2
AJ	0011-513-000	FLAT WASHER	2
AK	0060-013-000	TUBING	1.5 IN
AL	0731-105-005	FITTING	1
AM	0058-328-000	HOSE CLAMP	4
AN	0044-049-000	TEFLON TAPE, 1/2" (NOT SHOWN)	AR

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



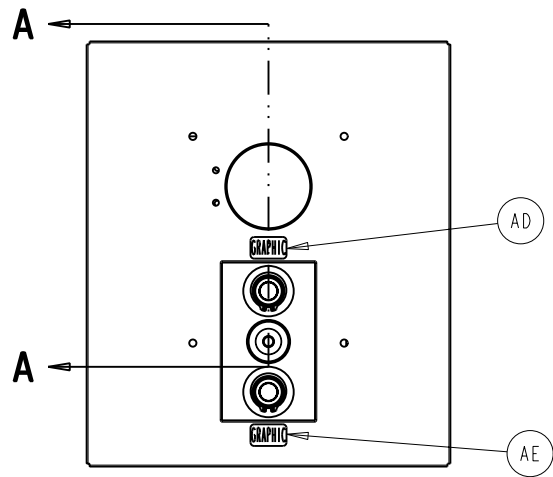
- NOTES:
- APPLIES TO ROVER MODEL 700-1 (PRESSURE TRANSDUCER).

- TORQUE TO 25 IN-LBS.
- CUT SOUND DAMPENING FOAM AND VIBRATION DAMPENING SHEET TO FIT.
- INSTALL FIXTURE (5905-003-077) INTO DOCKING PIN GUIDE AND THREAD PRECISION SWITCH IN UNTIL SWITCH ACTUATES. ADJUST PRECISION SWITCH UNTIL ITS BODY IS HORIZONTAL AND TIGHTEN JAM NUT.
- JAM NUT SUPPLIED WITH PRECISION SWITCH.
- TORQUE TO 17 IN-LBS.

- THREAD SCREWS INTO MOUNTING POSTS ON INSIDE SURFACE OF PANEL SO LED S ON BOARD LINE UP WITH THE WINDOWS.
- CLEAN METAL BANDING SURFACES WITH ALCOHOL.
- PLACE SNAP RETAINING RING ONTO COUPLING UNTIL IT COMPRESSES THE WAVE SPRING AND SNAPS INTO THE GROOVE. VERIFY THE ROUNDED INSIDE EDGE OF THE RETAINING RING IS FACING AWAY FROM THE FITTINGS.
- PLACE SNAP RETAINING RING ONTO COUPLING INTO THE GROOVE. CLOSEST TO THE FITTINGS. VERIFY THE ROUNDED INSIDE EDGE OF THE RETAINING RING IS FACING AWAY FROM THE FITTINGS.
- WHITE WIRE TO SHORT WIRE TERMINAL. YELLOW WIRE TO CENTER TERMINAL.

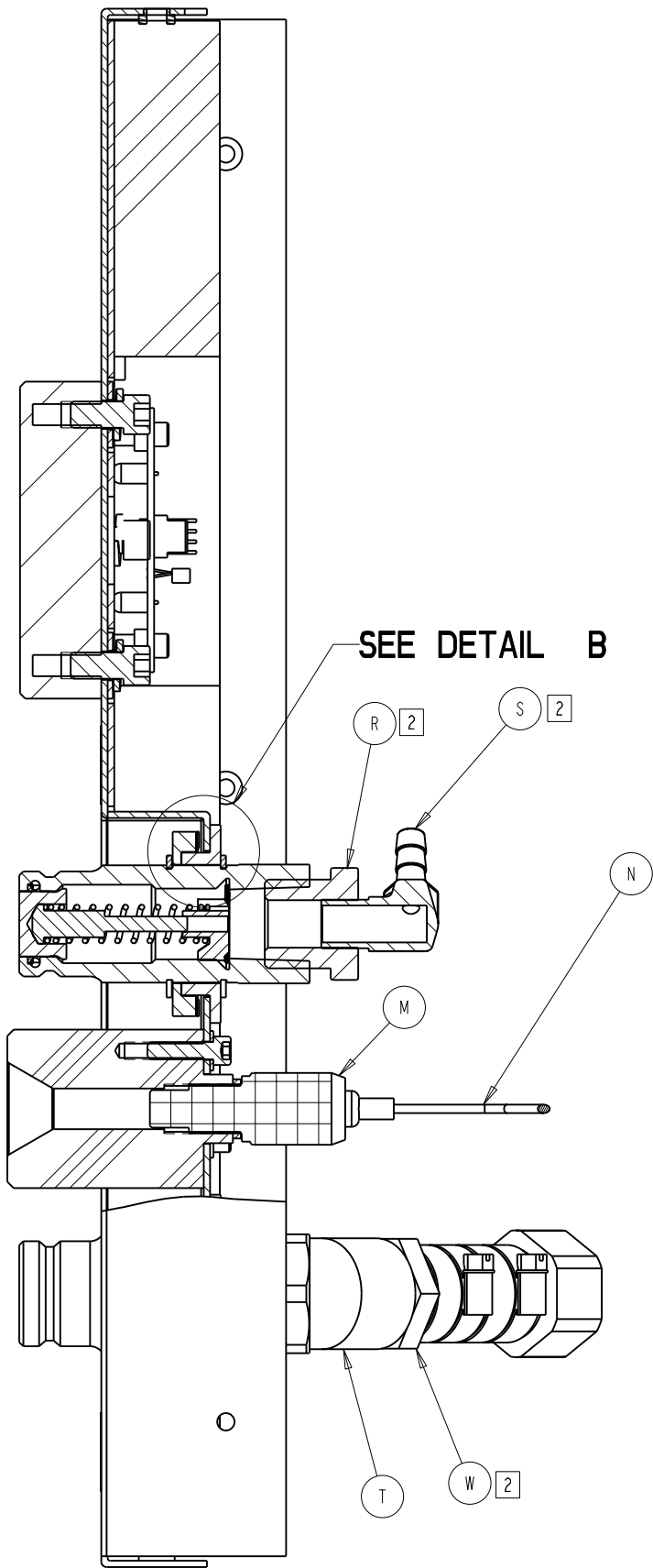
FORM NO. 191m009, Rev. NONE		SHEET 1 OF 2	
stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY G. HEILMAN	DATE 1-03	TITLE FLUID INTERFACE PANEL	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-901-220	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

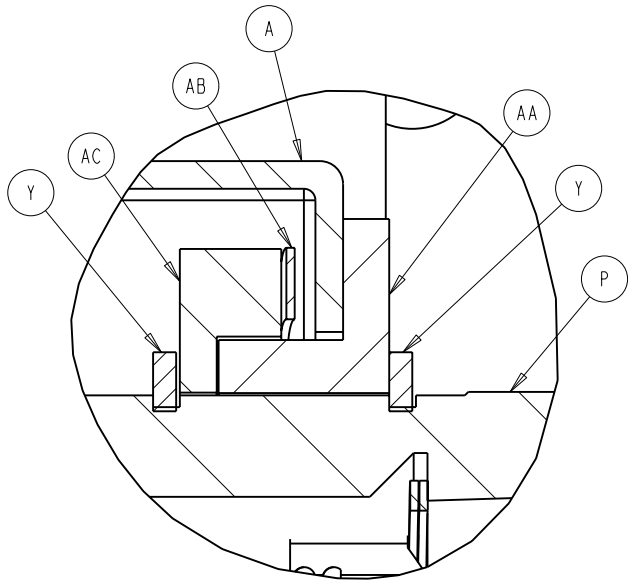


FRONT VIEW
SCALE: NONE

NOTES:



SECTION A-A
SCALE: NONE



DETAIL B (2X)
SCALE: NONE

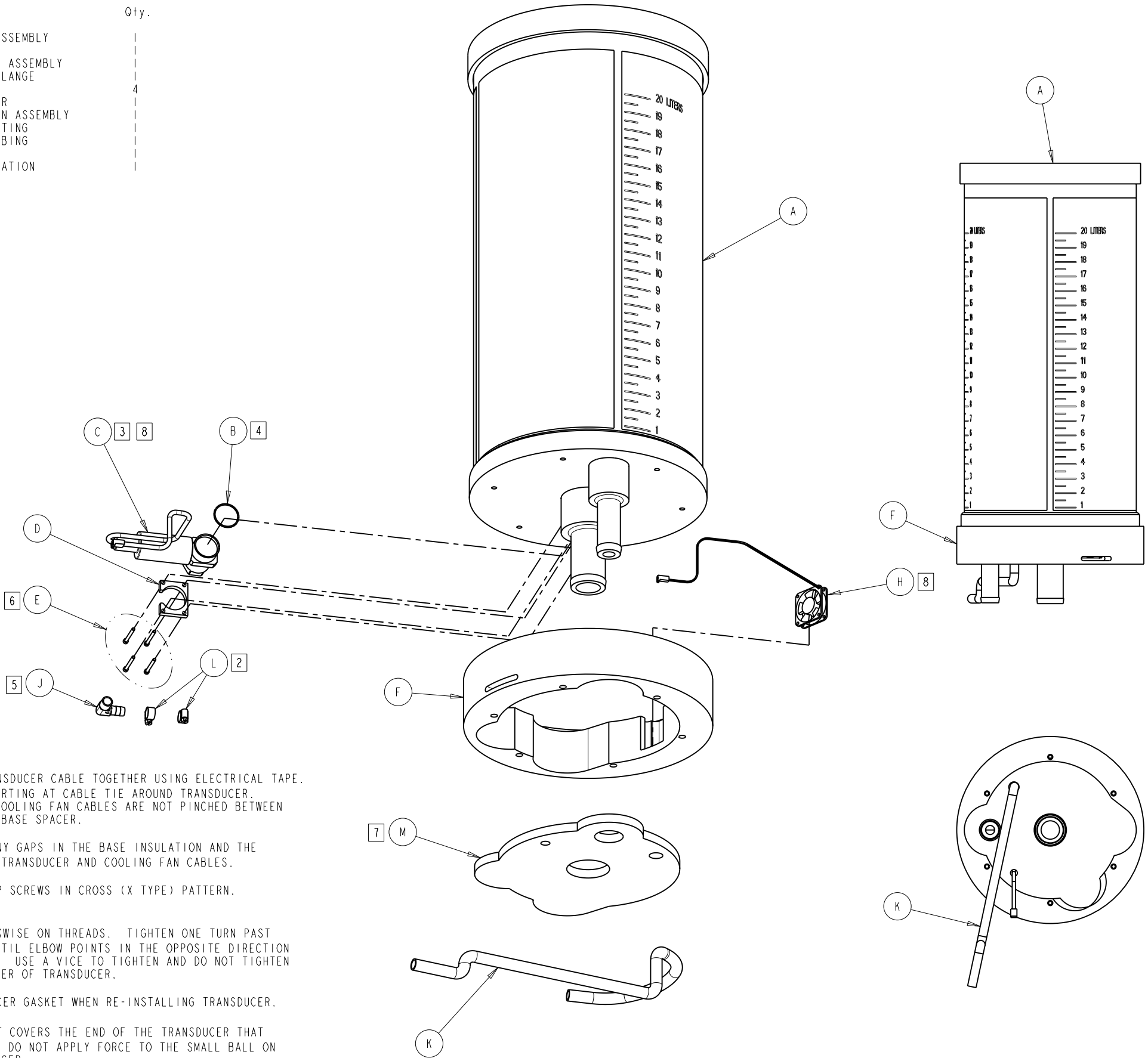
FORM NO. 19im009, Rev. NONE	SHEET 2 OF 2
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY G. HEILMAN	DATE 1-03	TITLE FLUID INTERFACE PANEL	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-901-220	REV. NONE

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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

Item	Part No.	Part Name	Qty.
A	0700-001-320	CANISTER ASSEMBLY	1
B	0721-263-001	O-RING	1
C	0712-063-001	TRANSDUCER ASSEMBLY	1
D	0721-264-001	MOUNTING FLANGE	1
E	0731-011-050	SHCS	4
F	0721-260-001	BASE SPACER	1
H	0712-062-001	COOLING FAN ASSEMBLY	1
J	0048-203-000	BARBED FITTING	1
K	0731-075-005	BRAIDED TUBING	1
L	0058-325-000	HOSE CLAMP	1
M	0721-259-001	BASE INSULATION	1



- [8] TAPE FAN CABLE AND TRANSDUCER CABLE TOGETHER USING ELECTRICAL TAPE. WRAP ABOUT 6 INCHES STARTING AT CABLE TIE AROUND TRANSDUCER. ENSURE TRANSDUCER AND COOLING FAN CABLES ARE NOT PINCHED BETWEEN CONTAINER BASE AND THE BASE SPACER.
- [7] APPLY RTVI62 BETWEEN ANY GAPS IN THE BASE INSULATION AND THE REFERENCE HOSE AND THE TRANSDUCER AND COOLING FAN CABLES.
- [6] TIGHTEN SOCKET HEAD CAP SCREWS IN CROSS (X TYPE) PATTERN. TORQUE TO 3 IN-LBS.
- [5] APPLY TEFLON TAPE CLOCKWISE ON THREADS. TIGHTEN ONE TURN PAST HAND TIGHT THEN TURN UNTIL ELBOW POINTS IN THE OPPOSITE DIRECTION AS THE TRANSDUCER BODY. USE A VICE TO TIGHTEN AND DO NOT TIGHTEN BY GRIPPING LONG CYLINDER OF TRANSDUCER.
- [4] ALWAYS REPLACE TRANSDUCER GASKET WHEN RE-INSTALLING TRANSDUCER.
- [3] APPLY RTVI08 SO IT JUST COVERS THE END OF THE TRANSDUCER THAT WILL TOUCH THE GASKET. DO NOT APPLY FORCE TO THE SMALL BALL ON THE SIDE OF THE TRANSDUCER.
- [2] STAGGER HOSE CLAMPS.

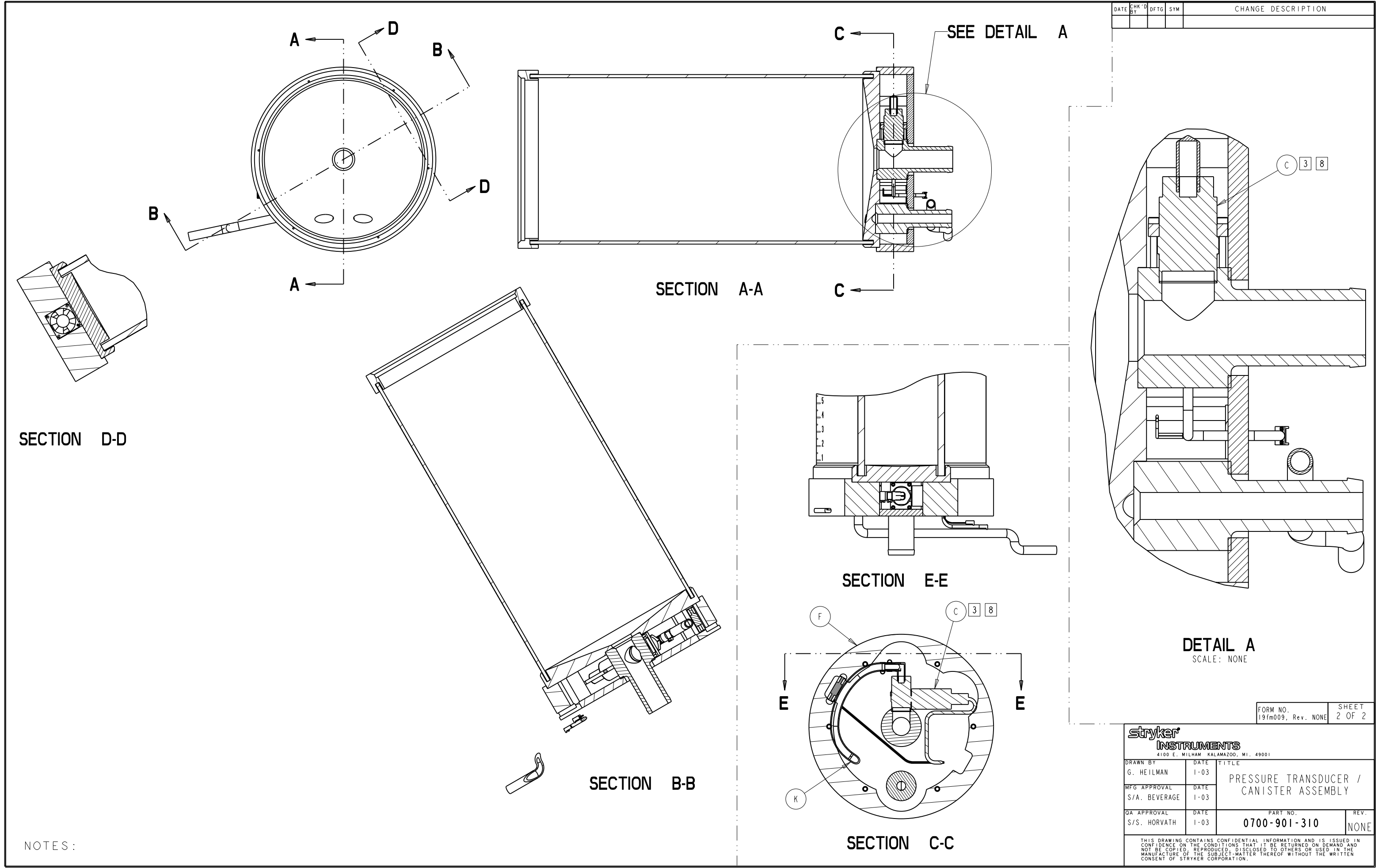
NOTES: 1. APPLIES TO MODEL 700-1 (PRESSURE TRANSDUCER).

SCALE 0.250

FORM NO. 191m009, Rev. NONE	SHEET 1 OF 2
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stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY G. HEILMAN	DATE 1-03	TITLE PRESSURE TRANSDUCER / CANISTER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-901-310	REV. NONE

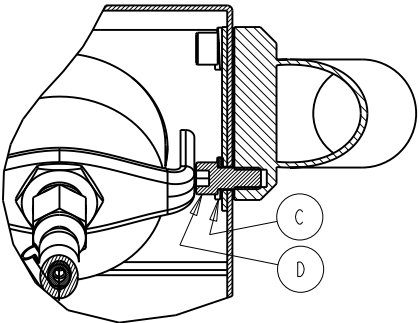
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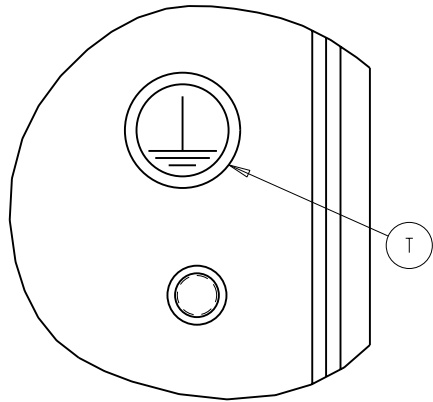
NOTES:

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

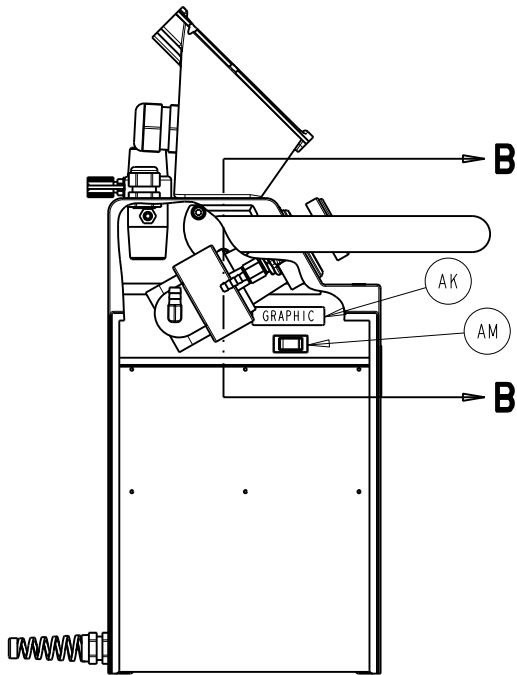
Item	Part No.	Part Name	Qty.	Item	Part No.	Part Name	Qty.	Item	Part No.	Part Name	Qty.
A	0700-001-411	ROVER TOWER HOUSING	1	W	0700-001-417	BATTERY TRAY FOAM	2	AR	0004-535-000	SHCS 10-32 X 3/8	4
B	0700-001-413	ROVER HANDLE	1	Y	0700-001-421	TOWER SHORT GASKET	1	AS	0731-082-007	STRAIN RELIEF (REFERENCE TUBE)	1
C	0012-012-000	LOCK WASHER (1/4)	6	AA	0700-001-422	TOWER GASKET	2	AT	0712-019-001	ROVER POWER CONTROLLER PCBA	1
D	0004-506-000	SHCS 1/4-20 X 1/2	6	AB	0731-084-001	CAPTIVE SCREW RETAINER	4	AW	0012-024-000	SPLIT LOCK WASHER #6	6
E	0700-001-450	SUCTION COUPLING ASSEMBLY	1	AC	0731-083-002	CAPTIVE SCREW	4	AY	0050-038-000	PAN HEAD SCREW 6-32 X 1/4	6
F	0004-532-000	SHCS 6-32 X 3/4	4	AD	0044-048-000	VHB TAPE	AR	BA	0060-012-000	BRAIDED TUBING (NOT SHOWN)	29 IN
H	0048-202-000	BARBED FITTING 1/4 X 1/8	1	AE	0700-001-718	SPEC LABEL (NEPTUNE PLACARD)	1	BB	0060-011-000	BRAIDED TUBING 1/4 (NOT SHOWN)	12 IN
J	0700-001-418	DOME STRAIN RELIEF	1	AF	0700-001-703	SPEC LABEL (WALL VAC SUCT PORT)	1	BC	0058-327-000	HOSE CLAMP (NOT SHOWN)	2
K	0711-052-001	VACUUM REGULATOR ASSEMBLY	1	AH	0700-001-723	LABEL (WALL VAC CAUTION)	1	BD	0700-001-424	BATTERY SWITCH CABLE ASSEMBLY (NOT SHOWN)	1
L	0011-510-000	FLAT WASHER (#8)	4	AJ	0700-001-706	SPEC LABEL (VAC PRES CONTROL)	1	BE	0058-323-000	HOSE CLAMP (NOT SHOWN)	1
M	0016-014-000	LOCKNUT, NYLON INSERT 8-32	4	AK	0700-001-715	SPEC LABEL (BATT SWITCH ON/OFF)	1	BF	0044-049-000	TEFLON TAPE, 1/2" (NOT SHOWN)	AR
N	0700-001-416	VACUUM GAUGE	1	AL	0723-065-001	LABEL (INCREASE ARROW-CCW)	1	BH	0072-002-001	LOCTITE 242 (NOT SHOWN)	AR
P	0048-200-000	BARBED FITTING 1/4 X 1/4	1	AM	0700-001-423	ROCKER SWITCH	1	BJ	0072-002-090	LOCTITE 411 (NOT SHOWN)	AR
R	0030-060-000	RUBBER EDGE TRIM	7.25"	AN	0700-001-115	USER INTERFACE PANEL TOWER	1				
S	0700-001-415	FLEX STYLE STRAIN RELIEF	1	AP	0011-511-000	FLAT WASHER (#10)	4				
T	0036-046-000	LABEL, PROTECTIVE EARTH (GRD)	1								



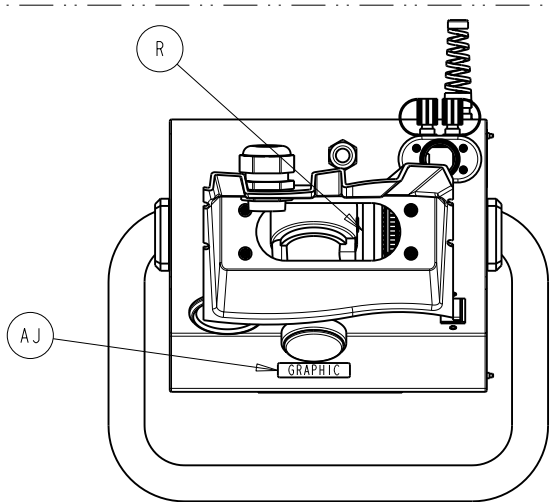
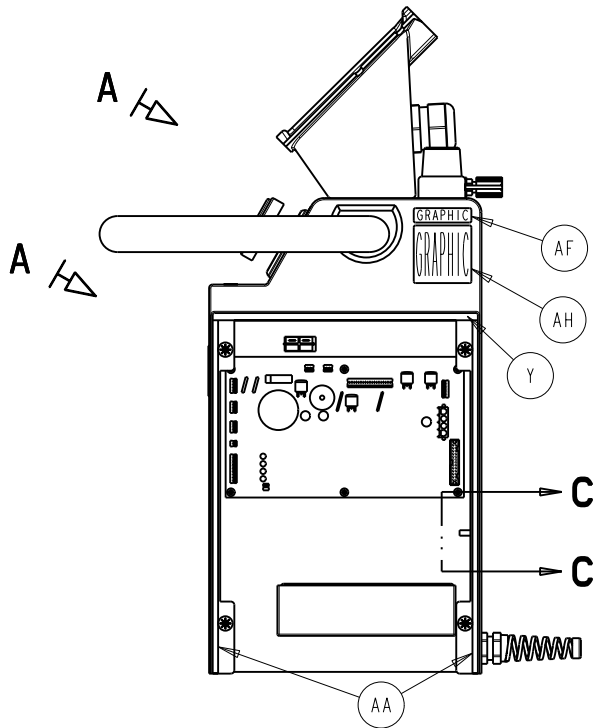
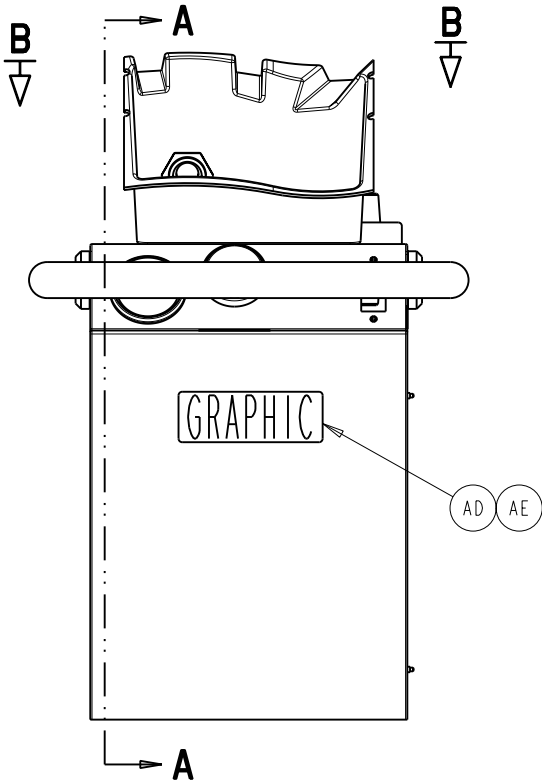
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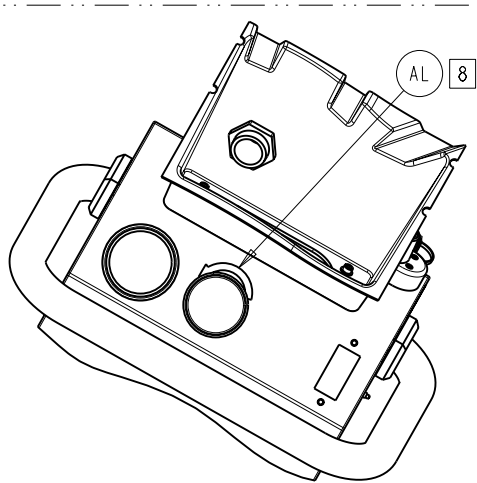
PARTIAL SECTION C-C
SCALE: NONE



PARTIAL SECTION A-A



VIEW B-B
SCALE: NONE



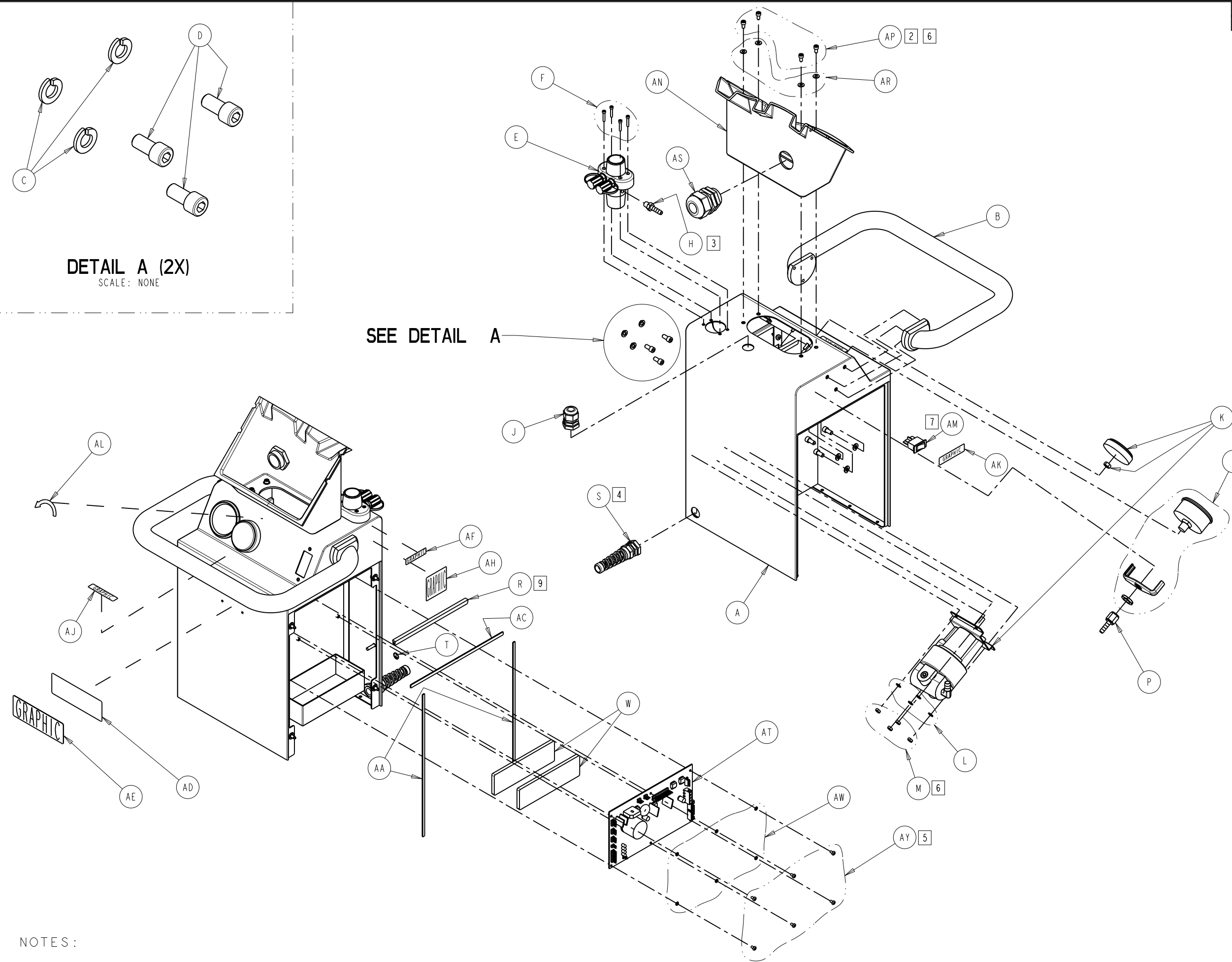
VIEW A-A
SCALE: NONE

- NOTES:
- APPLIES TO ROVER MODEL 700-1 (PRESSURE TRANSDUCER ONLY).
 - APPLY LOCTITE 242.
 - APPLY TEFLON TAPE IN A CLOCKWISE DIRECTION.
 - TORQUE TO 35 IN-LBS.
 - TORQUE TO 10 IN-LBS.
 - TORQUE TO 25 IN-LBS.
 - CONNECT TERMINALS OF BATTERY SWITCH CABLE ASSEMBLY TO ROCKER SWITCH. CONTACTS OF ROCKER SWITCH SHOULD BE ON TOP.
 - IF VACUUM REGULATOR ASSEMBLY (0711-052-001) IS INSTALLED, THEN ARROW MUST POINT IN A COUNTER CLOCKWISE DIRECTION.
 - APPLY LOCTITE 411 AT 3 POINTS INSIDE THE GROOVE OF THE RUBBER EDGE TRIM.

FORM NO. 191m009, Rev. NONE
SHEET 1 OF 2

stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY G. HEILMAN	DATE 1-03	TITLE TOWER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03	PART NO. 0700-901-410	REV. NONE
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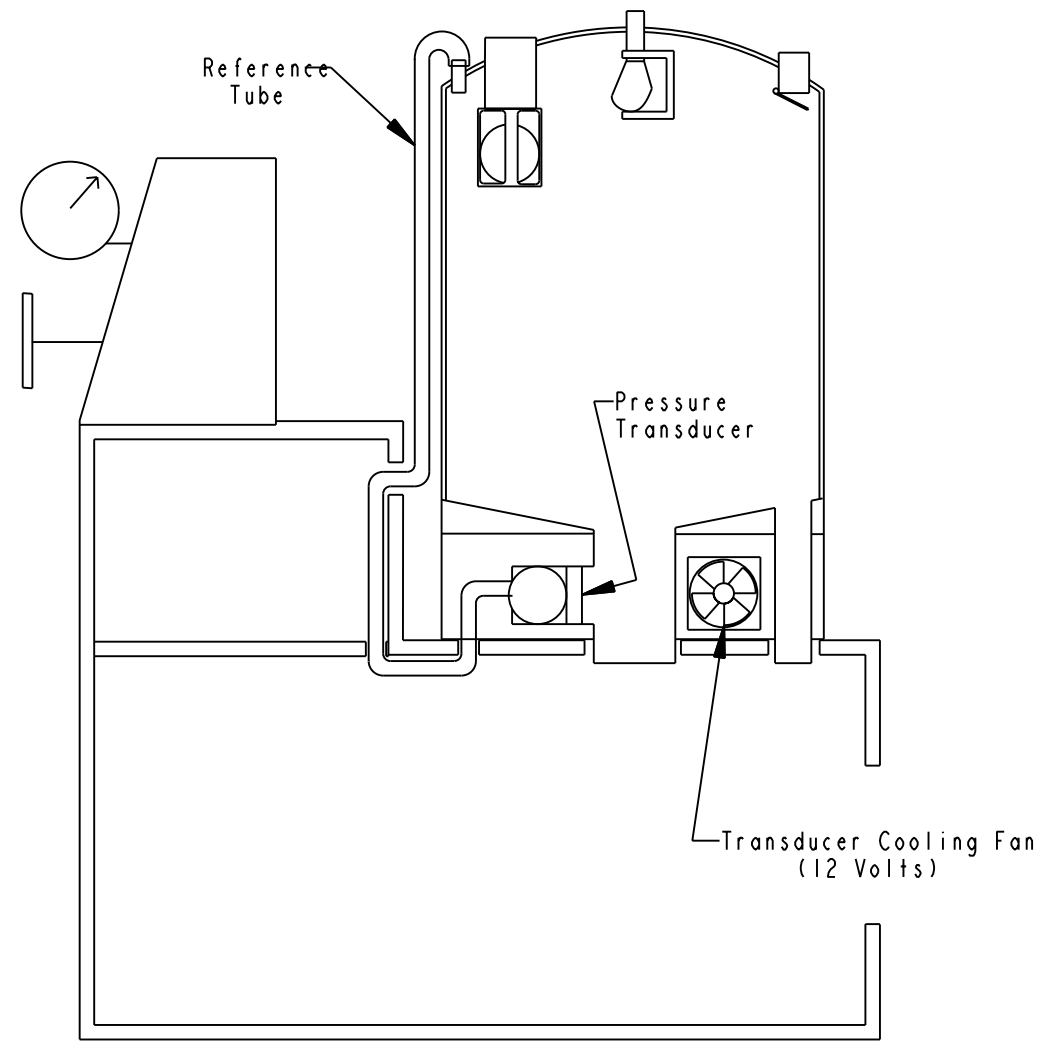
NOTES:

FORM NO. 19im009, Rev. NONE	SHEET 2 OF 2
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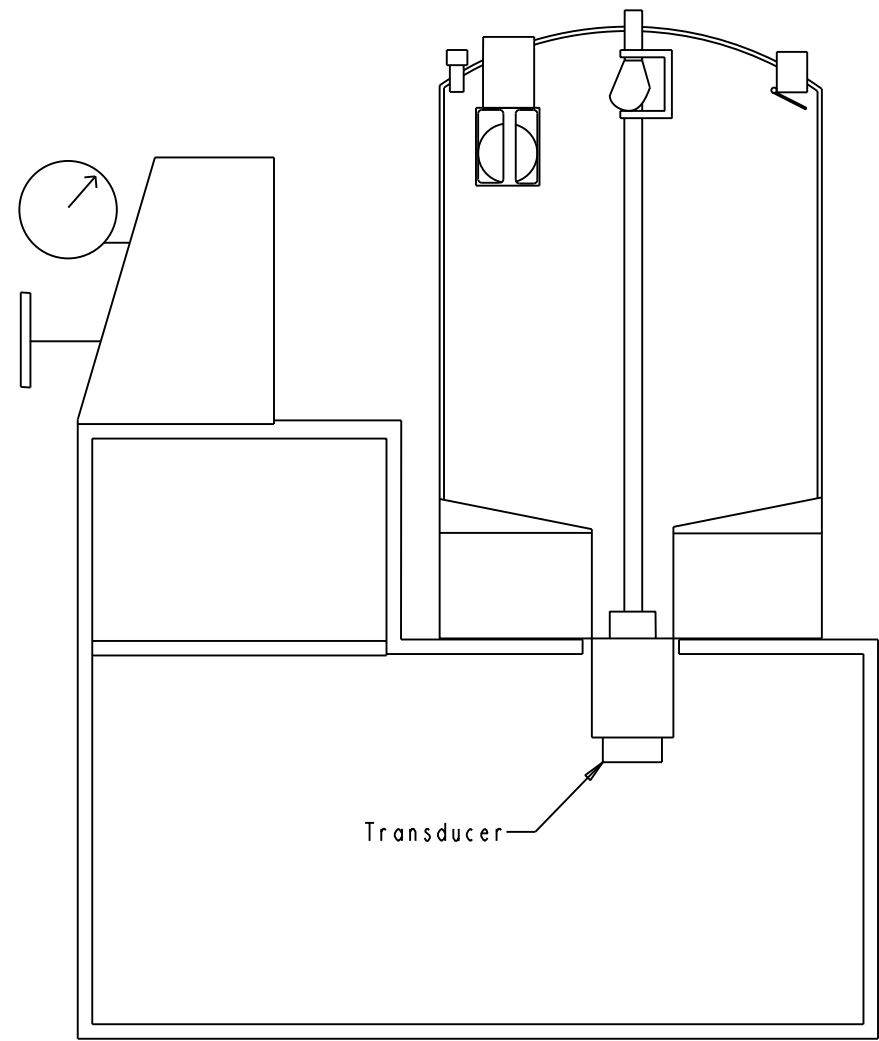
stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY G. HEILMAN	DATE 1-03	TITLE TOWER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03	PART NO. 0700-901-410	REV. NONE
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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

ROVER PRESSURE TRANSDUCER LOOP



ROVER LEVEL SENSOR LOOP



NOTES :

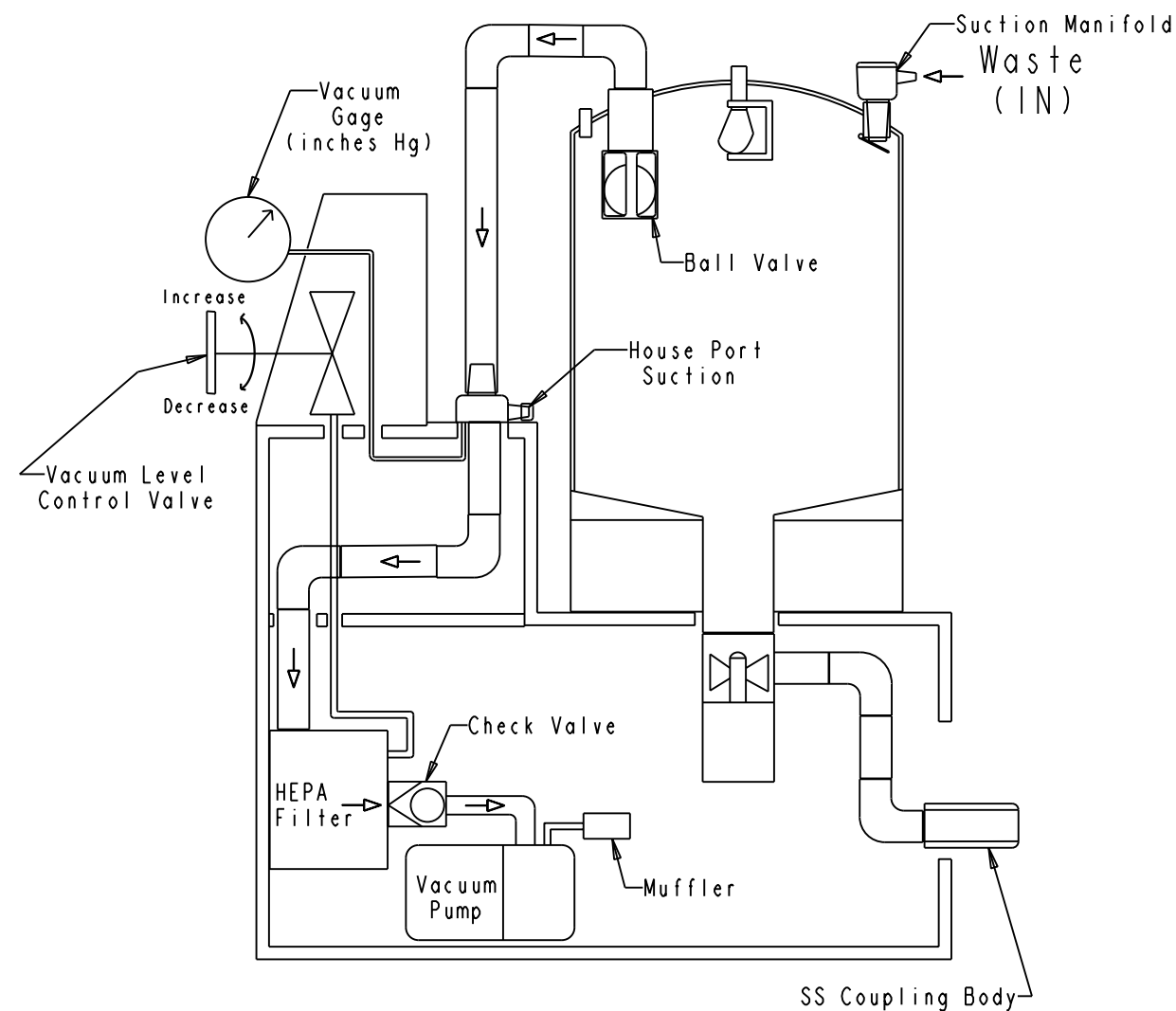
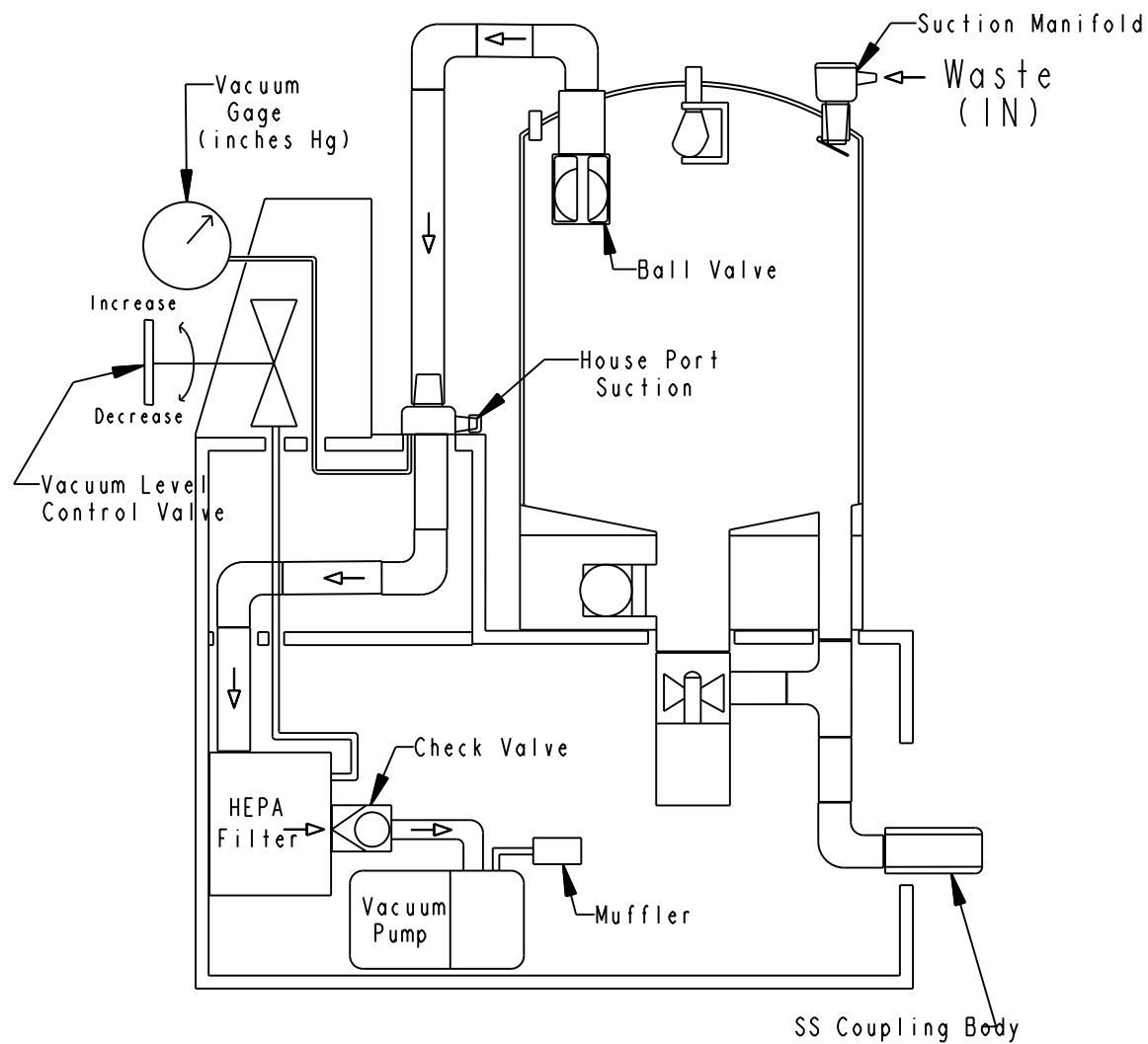
FORM NO. 19im009, Rev. NONE	SHEET 2 OF 6
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-4-02	TITLE BLOCK DIAGRAMS	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03		
		PART NO. 0700-901-550	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT-MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

PRESSURE TRANSDUCER ROVER VACUUM/SUCTION LOOP

LEVEL SENSOR ROVER VACUUM/SUCTION LOOP



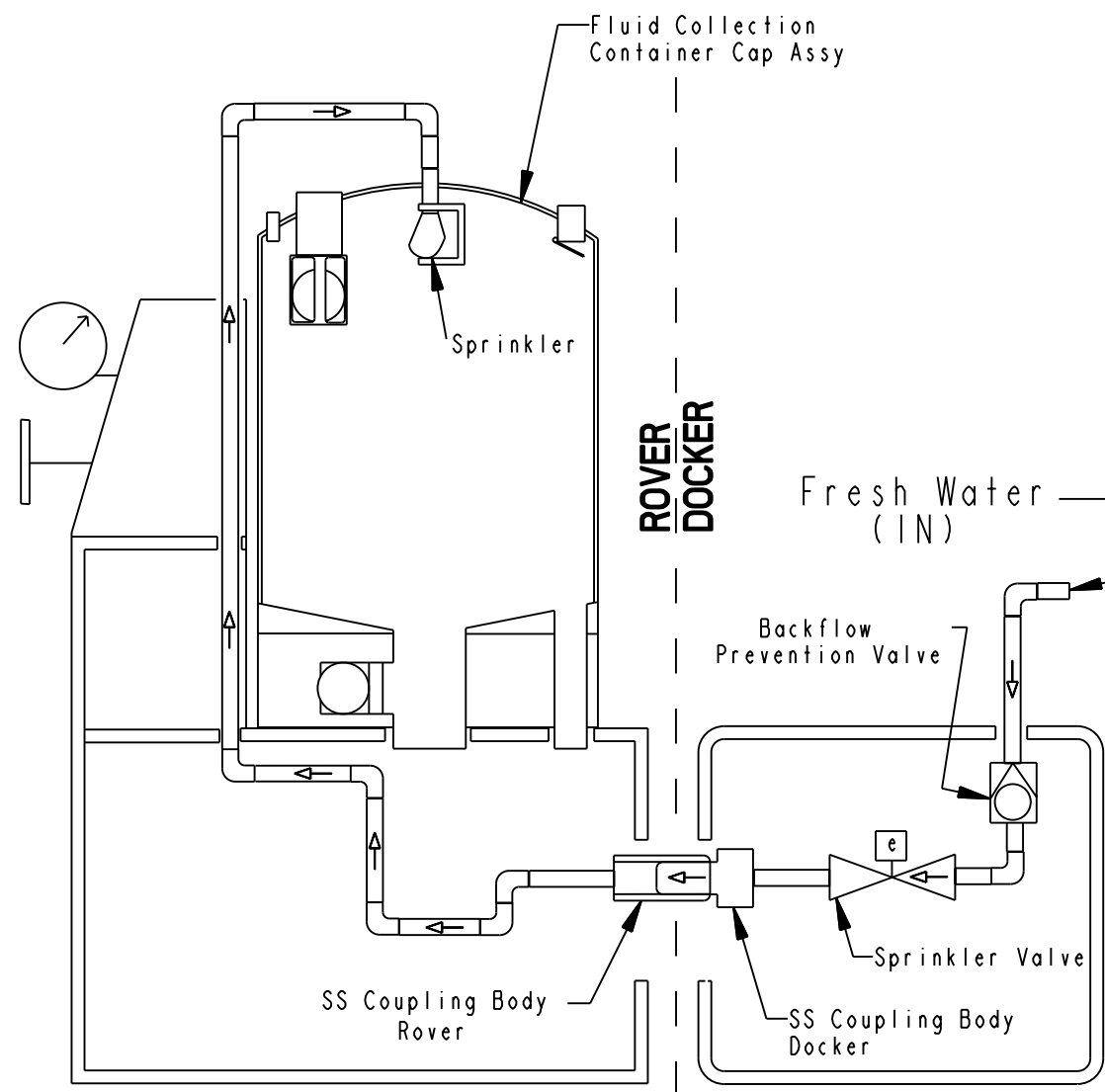
NOTES :

FORM NO. 19im009, Rev. NONE	SHEET 3 OF 6
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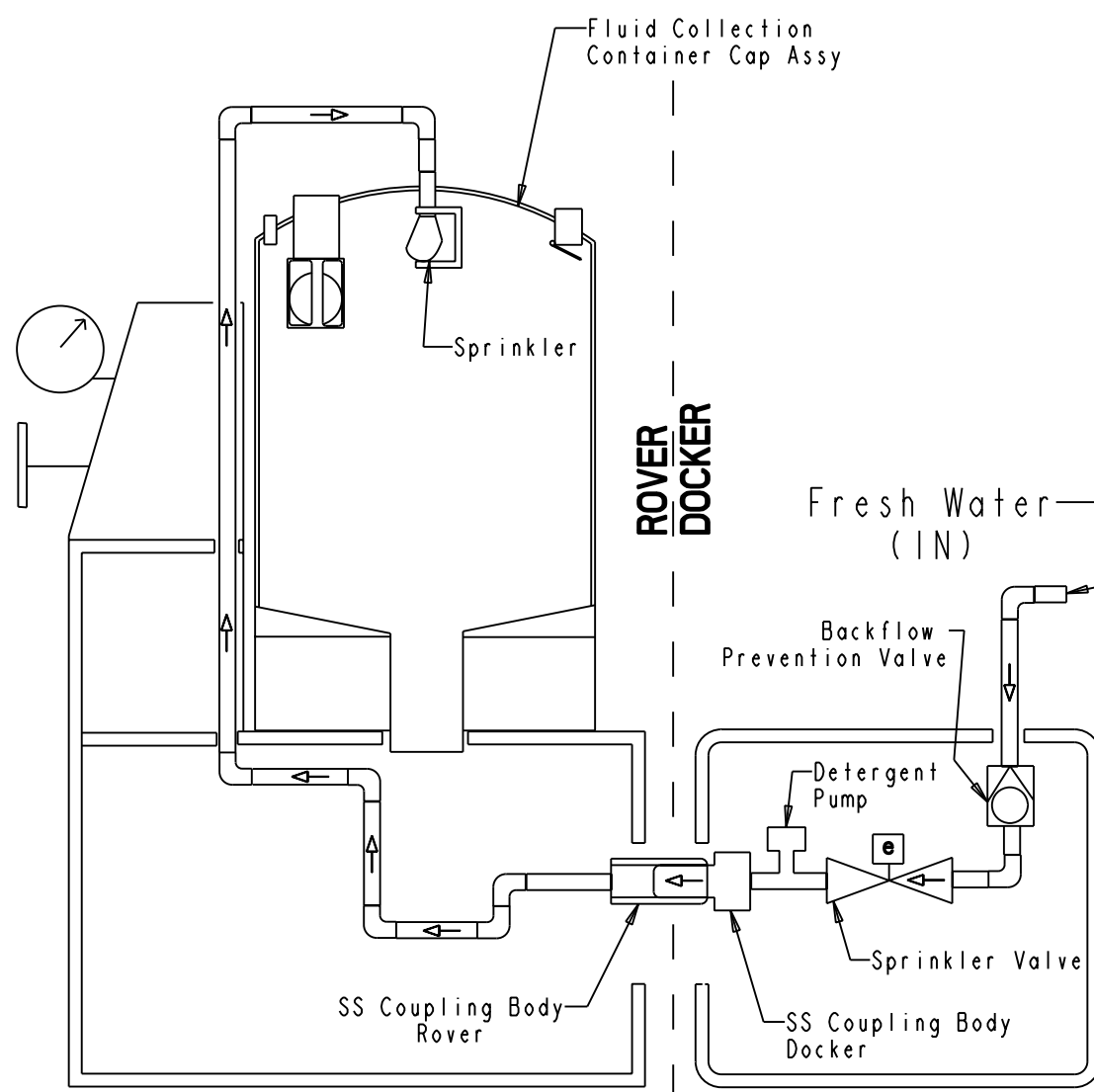
stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-4-02	TITLE BLOCK DIAGRAMS	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03		
		PART NO. 0700-901-550	REV. NONE
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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

PRESSURE TRANSDUCER ROVER SPRINKLER SYSTEM



LEVEL SENSOR ROVER SPRINKLER SYSTEM



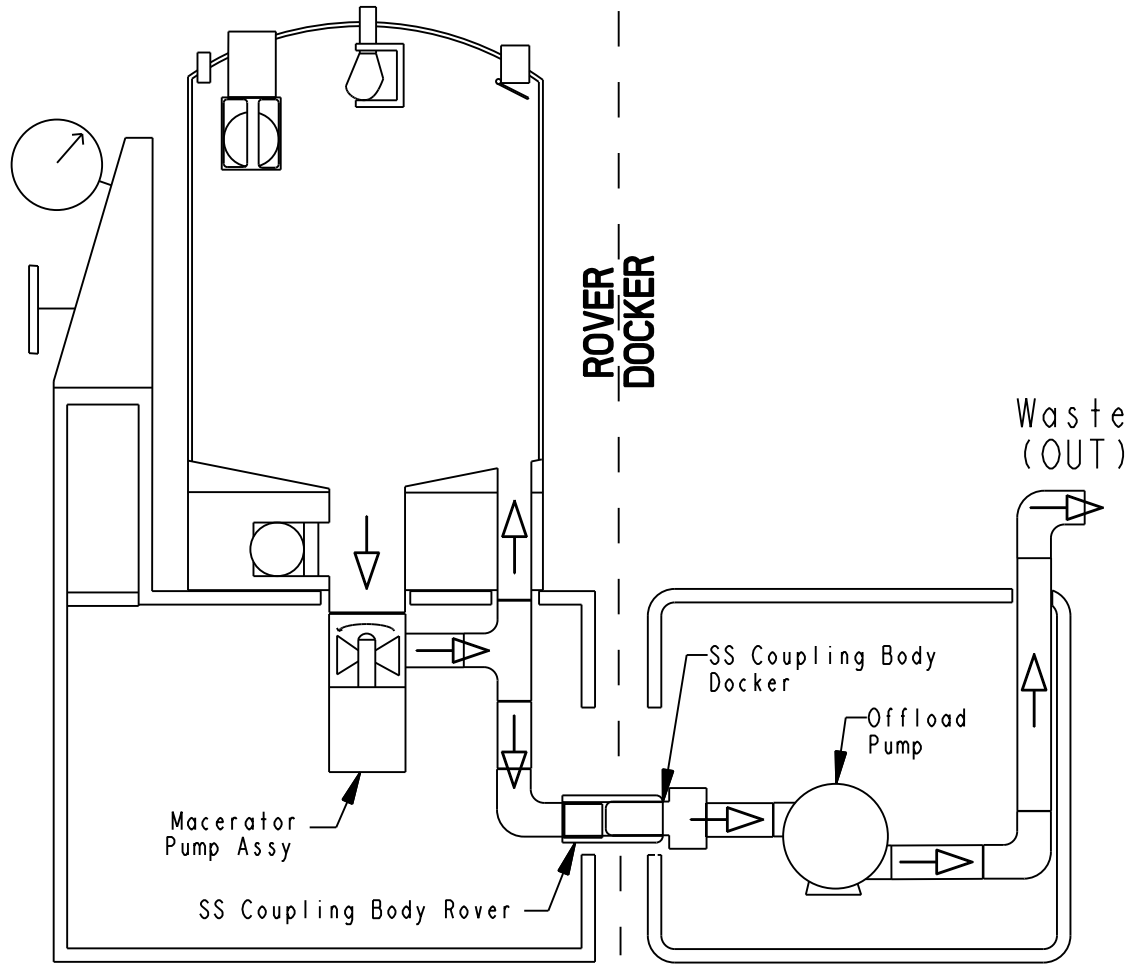
NOTES :

FORM NO. 19im009, Rev. NONE	SHEET 4 OF 6
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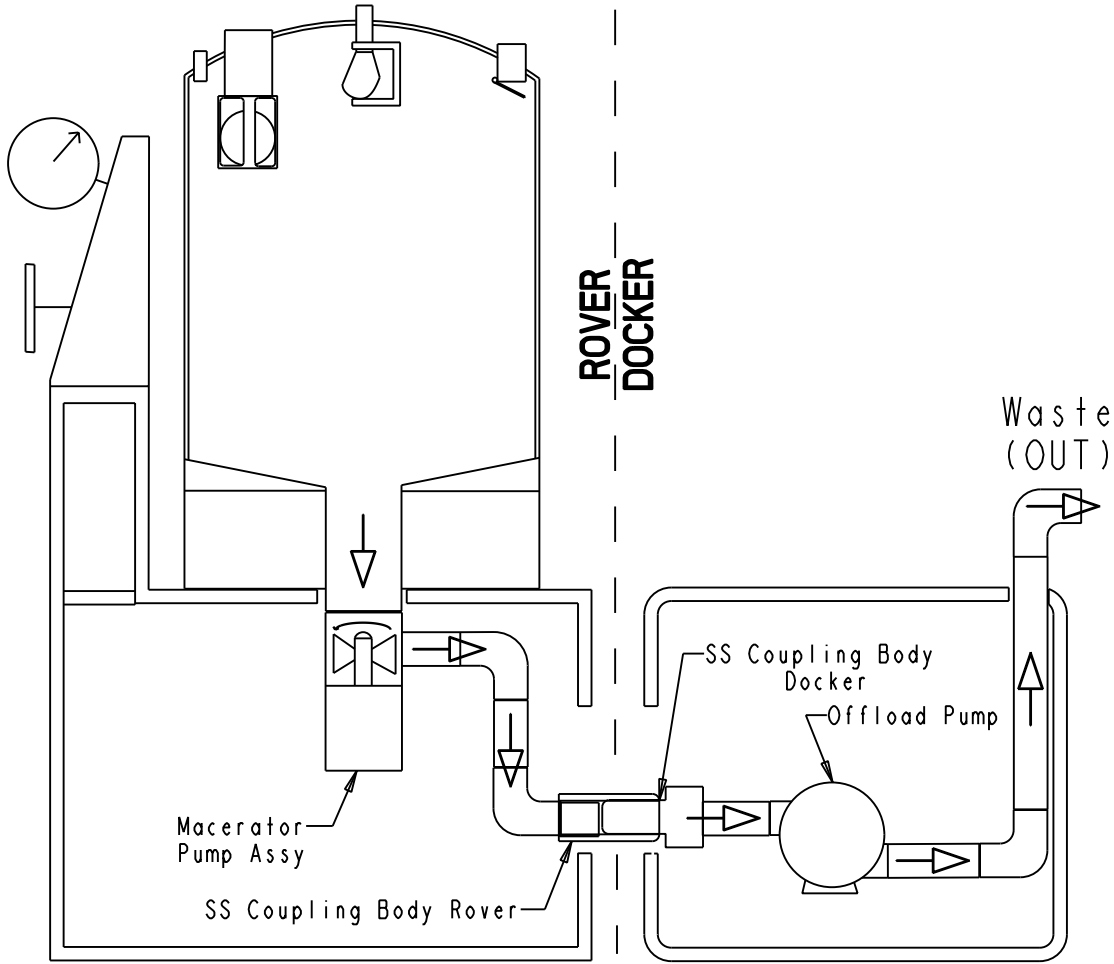
stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-4-02	TITLE BLOCK DIAGRAMS	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03		
		PART NO. 0700-901-550	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT-MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

PRESSURE TRANSDUCER ROVER & DOCKER WASTE SYSTEM



LEVEL SENSOR ROVER & DOCKER WASTE SYSTEM



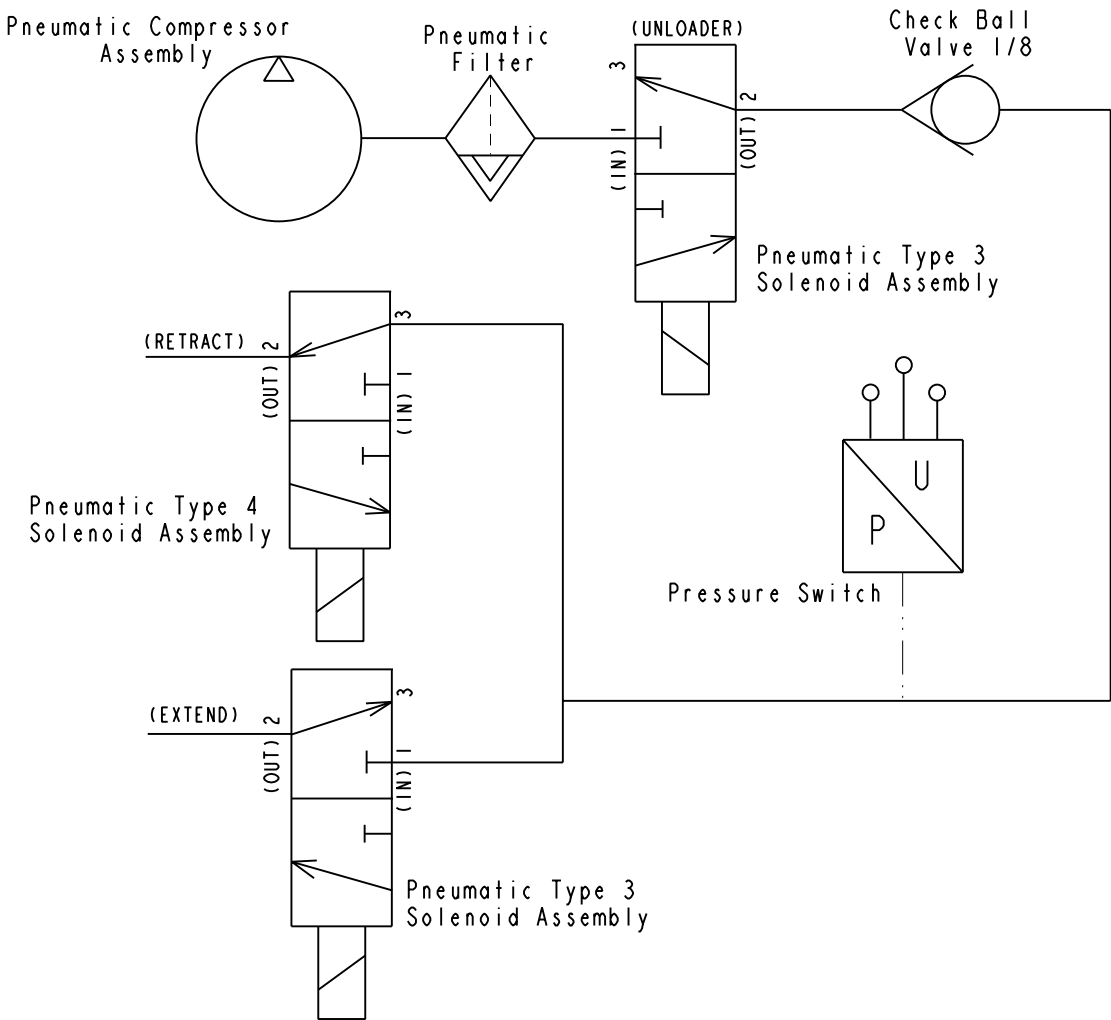
NOTES :

FORM NO. 19im009, Rev. NONE	SHEET 5 OF 6
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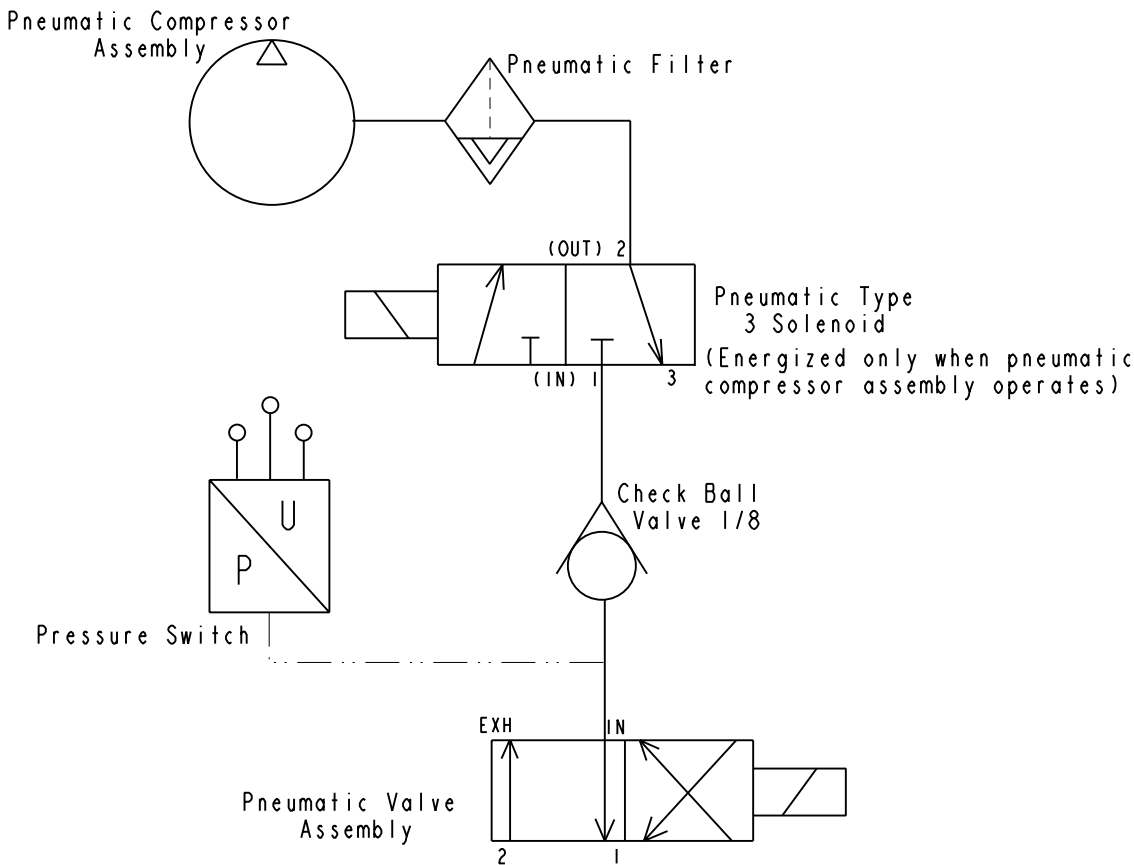
stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-4-02	TITLE BLOCK DIAGRAMS	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03		
		PART NO. 0700-901-550	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

3 SOLENOID OPTION DOCKER PNEUMATICS



2 SOLENOID OPTION DOCKER PNEUMATICS



NOTES :

FORM NO. 19im009, Rev. NONE	SHEET 6 OF 6
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-4-02	TITLE BLOCK DIAGRAMS	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03		
		PART NO. 0700-901-550	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT-MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			

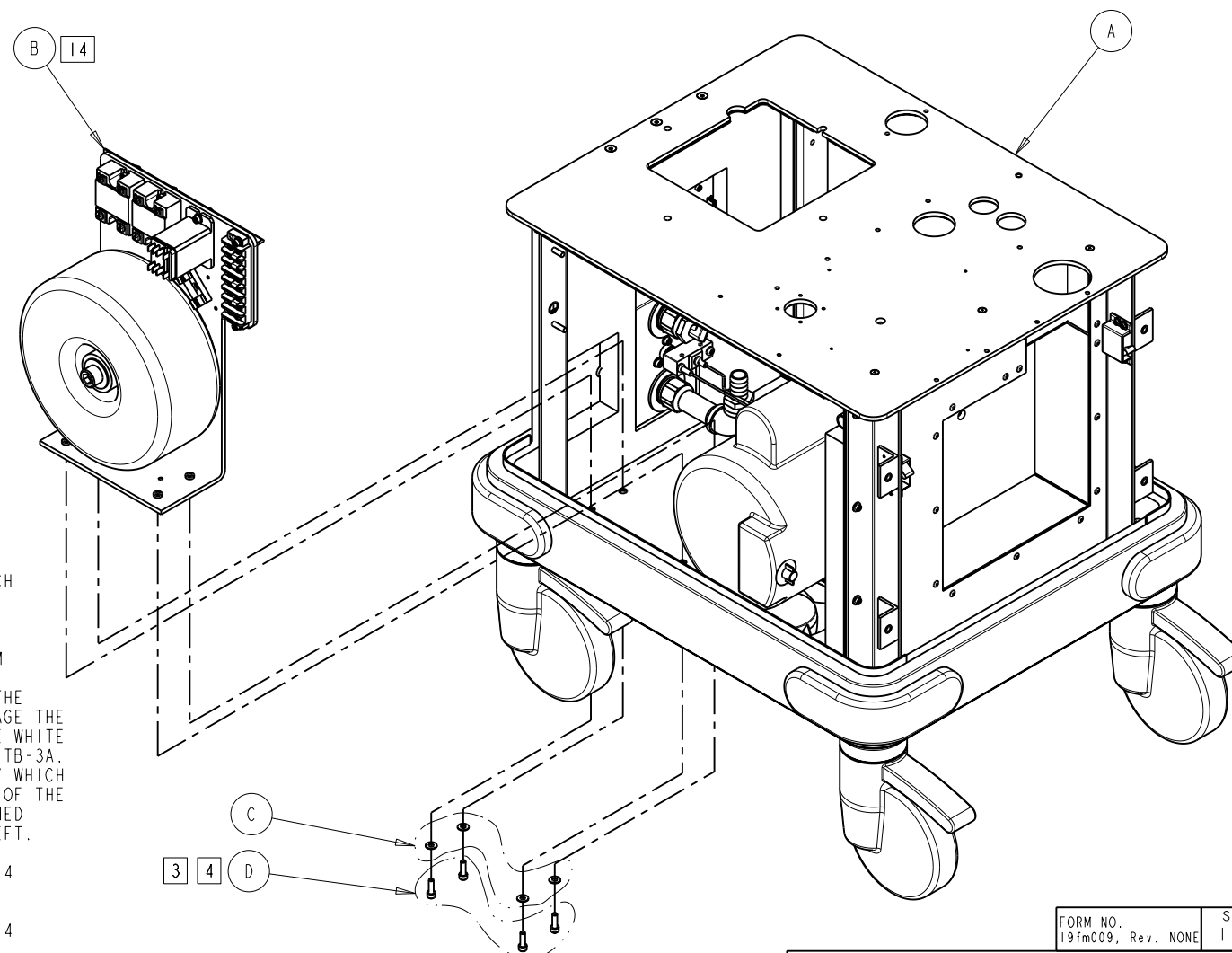
Item	Part No.	Part Name	Qty.
A	0700-001-110	BASE ROVER ASSEMBLY	1
B	0700-001-030	POVER TRANSFORMER ASSEMBLY	1
C	0011-511-000	FLAT WASHER (#10)	4
D	0004-521-000	SHCS 10-32 X 5/8	4
E	0700-001-014	BLOWER GASKET	1
F	0700-001-013	VACUUM MOTOR	1
H	0014-107-000	RUBBER WASHER #8	6
J	0011-510-000	FLAT WASHER (#8)	5
K	0004-533-000	SHCS 8/32 X 1	3
L	0700-001-015	STANDOFF	1
M	0700-001-016	STANDOFF	2
N	0001-159-000	FLAT HEAD SOCKET SCREW (#8)	1
P	0700-001-012	FINGER GUARD	1
R	0004-529-000	SHCS 6-32 X 3/8	4
S	0700-001-011	SMOKE FILTER PLENUM	1
T	0004-156-000	SHCS 4-40 X 1/4	4
W	0700-001-017	ROVER POWER CORD	1
Y	0700-001-412	POWER SWITCH	1
AA	0700-001-409	POWER SWITCH SPLASH COVER	1

13. CONNECT THE PNEUMATIC PANEL ASSEMBLY (0700-001-070) AS FOLLOWS:
 - A. CONNECT THE 1LJ8A CONNECTOR (YELLOW/RED) TO THE SOLENOID ON THE PNEUMATICS PANEL ASSEMBLY.
 - B. CONNECT THE 1LJ8B CONNECTOR (BLACK/RED) TO THE COMPRESSOR ON THE PNEUMATICS PANEL ASSEMBLY.
 - C. ATTACH THE FREE END OF THE PNEUMATICS TUBING TO THE PNEUMATICS ELBOW FITTING AT THE BOTTOM OF THE POWER IV POLE ASSEMBLY.
12. TORQUE TO 150 IN-LBS.
11. ROTATE THE POLE SO THE PNEUMATIC ELBOW FITTING NEAR THE BOTTOM OF THE POLE IS TOWARDS THE BACK OF THE ROVER (AWAY FROM THE VACUUM PUMP).
10. PLACE THE FOLLOWING SEQUENCE OF PARTS ONTO THE GROUND STUD INSIDE THE RIGHT SIDE OF TOWER TO THE RIGHT OF THE BATTERY TRAY:
 - A. #10 EXTERNAL LOCK WASHER (0013-018-000).
 - B. GREEN/YELLOW WIRE OF POWER CORD.
 - C. #10 EXTERNAL LOCK WASHER (0013-018-000).
 - D. 10-32 HEX NUT (0015-004-000).
 - E. TORQUE NUT TO 25 IN-LBS.
 - F. #10 EXTERNAL LOCK WASHER (0013-018-000).
 - G. PROTECTIVE EARTH GROUND CABLE (GREEN/YELLOW WIRE).
 - H. #10 EXTERNAL LOCK WASHER (0013-018-000).
 - I. TORQUE NUT TO 25 IN-LBS.
9. SNAP POWER SWITCH INTO CUTOUT IN THE FRONT TOWER ASSEMBLY. THE "ON" POSITION SHOULD BE ON TOP. THE FOLLOWING APPLIES WHILE LOOKING STRAIGHT AT THE TERMINALS ON THE BACK OF THE POWER SWITCH:
 - A. ROUTE BLUE AND BROWN WIRES ON POWER CORD TO THE POWER SWITCH. BLUE WIRE ON BOTTOM LEFT AND BROWN WIRE ON BOTTOM RIGHT.
 - B. ROUTE THE TRANSFORMER TO CIRCUIT BREAKER CABLE UP THE BACK SURFACE OF THE TOWER AND CONNECT THE BLUE WIRE TO THE TOP LEFT TERMINAL AND THE BROWN WIRE TO THE TOP RIGHT TERMINAL OF THE POWER SWITCH.
8. WHEN REPLACING THE PLUG ON THE POWER CORD, TWIST STRANDS OF BROWN WIRE TOGETHER AND INSERT INTO BLACK SOCKET. TWIST STRANDS OF BLUE WIRE TOGETHER AND INSERT INTO CLEAR SOCKET. TWIST STRANDS OF GREEN WIRE TOGETHER AND INSERT INTO GREEN SOCKET. NOTE: GREEN WIRE SHOULD BE SLIGHTLY LONGER THAN THE OTHER TWO WIRES.
7. APPLY RTV108 TO BOTTOM SURFACE OF SMOKE FILTER PLENUM.
6. TORQUE TO 11 IN-LBS.
5. TORQUE TO 25 IN-LBS.
4. TORQUE TO 40 IN-LBS.
3. APPLY LOCTITE 222.
2. MAKE SURE FAN CABLE AND FITTINGS ON COUPLINGS ARE OUT OF WAY PRIOR TO ASSEMBLYING.
1. APPLIES TO ROVER MODEL 700-1 (LEVEL SENSOR).

Item	Part No.	Part Name	Qty.
AB	0004-525-000	SHCS 8-32 X 3/8	4
AC	0013-018-000	LOCK WASHER #10 EXTERNAL	10
AD	0015-004-000	HEX NUT 10-32	5
AE	0058-334-000	ADHESIVE CABLE MOUNT	1
AF	0700-001-060	POWER IV POLE ASSEMBLY	1
AH	0011-508-000	FLAT WASHER (5/16)	1
AJ	0004-536-000	SHCS 5/16-18 X 3/4	1
AK	0011-491-000	FLAT WASHER (#6)	2
AL	0004-523-000	SHCS 6-32 X 1/2	2
AM	0700-001-070	PNEUMATICS PANEL ASSEMBLY	1
AN	0700-001-021	PANEL RETAINER	2
AP	0700-001-050	USER INTERFACE PANEL ASSEMBLY	1
AR	0023-282-000	#4-20 PAN HEAD SELF THREADING SCREW	4
AS	0700-001-018	TOWER FRONT FOAM	1
AT	0700-001-019	TOWER BACK FOAM	1
AW	0700-001-080	TOWER LEFT PANEL ASSEMBLY	1
AY	0700-001-714	SPEC LABEL (SMOKE FILTER COMPARTMENT)	1
BA	0700-001-702	SPEC LABEL (700-1 ROVER S/N LABEL)	1
BB	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR
BC	0072-002-061	RTV 108 (NOT SHOWN)	AR

15. PLACE THE FOLLOWING SEQUENCE OF PARTS ON THE GROUND STUD ON THE BACK LEFT CHASSIS SUPPORT BY THE TRANSFORMER.
 - A. #10 EXTERNAL LOCK WASHER (0013-018-000).
 - B. GREEN/YELLOW WIRE FROM TRANSFORMER.
 - C. #10 EXTERNAL LOCK WASHER (0013-018-000).
 - D. 10-32 HEX NUT (0015-004-000).
 - E. TORQUE NUT TO 25 IN-LBS.
 - F. #10 EXTERNAL LOCK WASHER (0013-018-000).
 - G. GREEN/YELLOW WIRE FROM PUMP TO TRANSFORMER CABLE ASSEMBLY (CORD ATTACHED TO VACUUM PUMP).
 - H. #10 EXTERNAL LOCK WASHER (0013-018-000).
 - J. TORQUE NUT TO 25 IN-LBS.
 - K. #10 EXTERNAL LOCK WASHER (0013-018-000).
 - L. GREEN/YELLOW WIRE OF PROTECTIVE EARTH GROUND CABLE ASSEMBLY (FROM SLIT CONDUIT).
 - M. #10 EXTERNAL LOCK WASHER (0013-018-000).
 - N. 10-32 HEX NUT (0015-004-000).
 - O. TORQUE TO 25 IN-LBS.

 14. CONNECT THE TERMINALS ON THE CABLE ATTACHED TO THE VACUUM PUMP TO THE TRANSFORMER ASSEMBLY.
 - A. WRAP THE BLUE AROUND THE BROWN AND GREEN WIRES AND ATTACH TO TB-1A. (FLAT SIDE TOWARD TERMINAL BLOCK).
 - B. ROUTE THE BROWN WIRE BEHIND THE WHITE WIRES AND CONNECT IT TO K2-1. (THE TERMINAL GOES BEHIND THE PLATE).
 - C. CONNECT THE BLACK AND WHITE WIRES COMING FROM THE VACUUM MOTOR. (WHITE TO TB-1B) AND (BLACK TO K1-1).
 - D. ATTACH THE FAN CABLE TO THE TRANSFORMER ASSEMBLY. CUT THE PART NUMBER LABEL OFF THE CABLE. BE CAREFUL NOT TO DAMAGE THE INSULATION. END WITH THE K1-2 LABEL TO K1-2. MAKE SURE WHITE WIRE ALREADY ATTACHED STAYS ATTACHED. THE OTHER END TO TB-3A.
 - E. ATTACH THE TRANSFORMER TO CIRCUIT BREAKER CABLE ASSEMBLY WHICH IS THE BLUE/BROWN TWISTED PAIR COMING ACROSS THE CENTER OF THE CHASSIS. BROWN TO TB-8B. THE BROWN WIRE ALREADY ATTACHED SHOULD STAY TO THE RIGHT AND THE NEW WIRE GOES TO THE LEFT. BLUE TO TB-4B.
 - F. CONNECT THE RED/GREEN TWISTED PAIR OF WIRES WITH THE K2-4 AND K2-3 TERMINALS TO THE K2 RELAY. (RED TO K2-3) AND (GREEN TO K2-4).
 - G. CONNECT THE RED/WHITE TWISTED PAIR OF WIRES WITH THE K1-4 AND K1-3 TERMINALS TO THE K1 RELAY. (RED TO K1-3) AND (WHITE TO K1-4).
 - H. CONNECT THE ORANGE/BLACK TWISTED PAIRS TO THE K3 RELAY WITH THE FLATS ON THE TERMINAL TOWARDS THE FRONT OF THE ROVER. (BLACK K3-6), (ORANGE K3-4), (BLACK K3-9) AND (ORANGE K3-7).
 - I. CONNECT THE BLACK/WHITE PAIR TO THE K3 RELAY. BLACK LABELED K3-COIL (-) TO B (ON TOP) AND WHITE LABELED K3-COIL (+) TO A (ON BOTTOM).
 - J. CONNECT THE BLUE/YELLOW TWISTED PAIR OF WIRES WITH THE 1LJ4 CONNECTOR TO THE MATING CONNECTOR ON THE TRANSFORMER.
 - K. TORQUE TERMINALS 3 AND 4 ON THE K1 AND K2 RELAYS TO 10 IN-LBS.
 - L. TORQUE TERMINALS 1 AND 2 ON THE K1 AND K2 RELAYS TO 17 IN-LBS.
 - M. TORQUE TERMINALS ON THE TERMINAL BLOCK TO 10 IN-LBS. IF TERMINALS CAN STILL BE MOVED, HAND-TIGHTEN FURTHER.



NOTES:

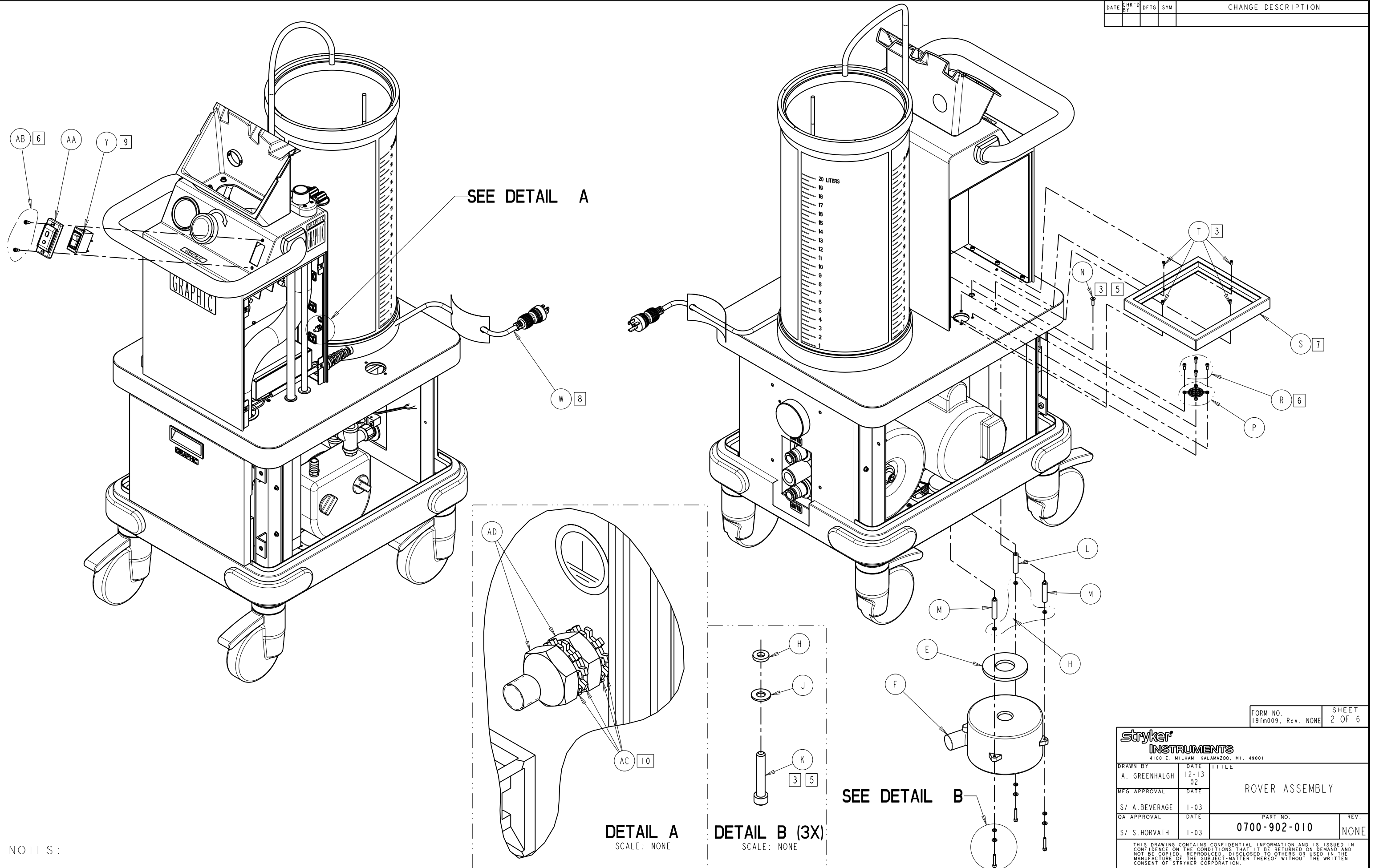
DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

FORM NO. 19fm009, Rev. NONE	SHEET 1 OF 6
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stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH	DATE 12-13 02	TITLE ROVER ASSEMBLY	
MFG APPROVAL	DATE		
S/ A. BEVERAGE	1-03		
QA APPROVAL	DATE		
S/ S. HORVATH	1-03	PART NO. 0700-902-010	REV. NONE

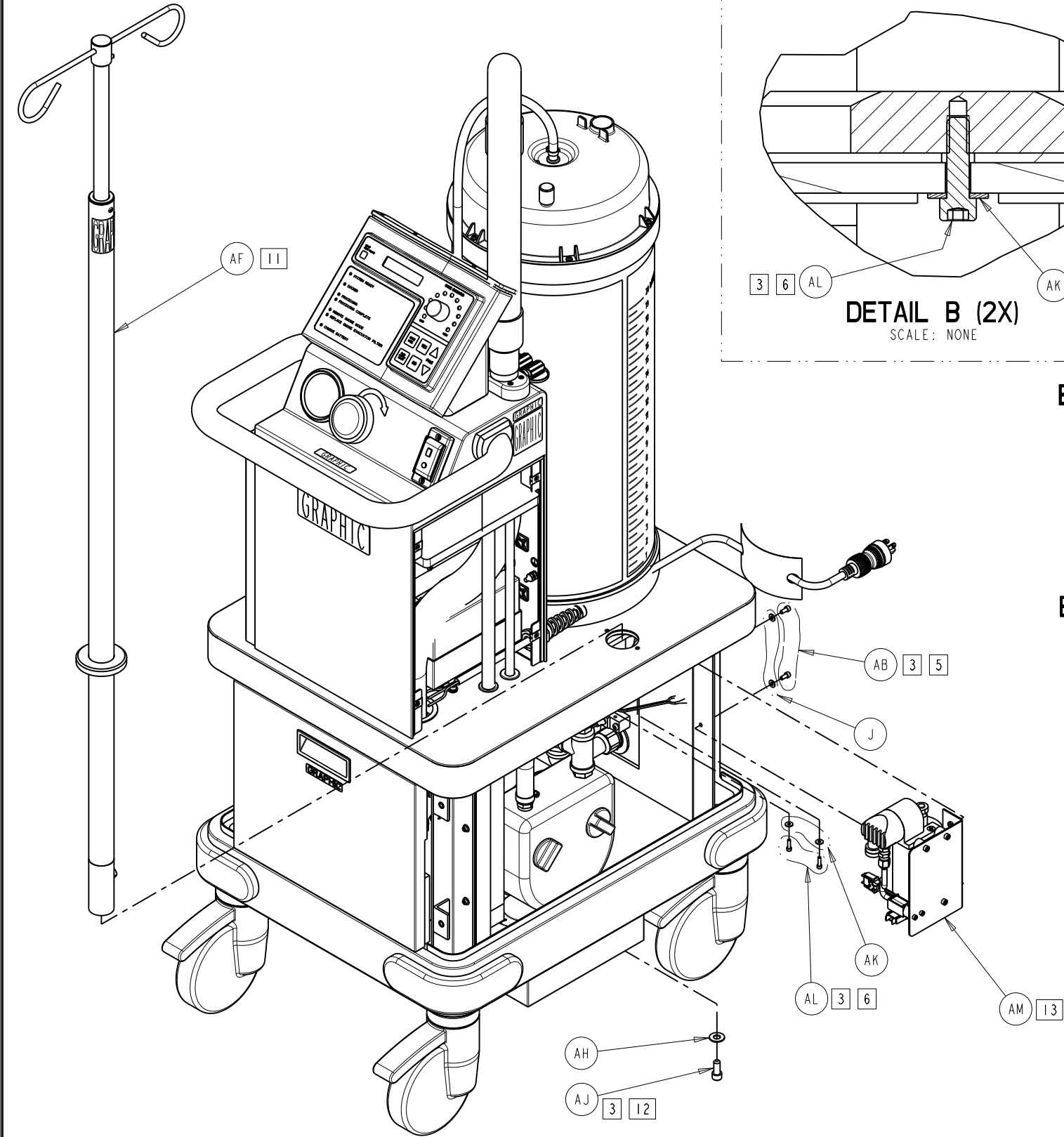
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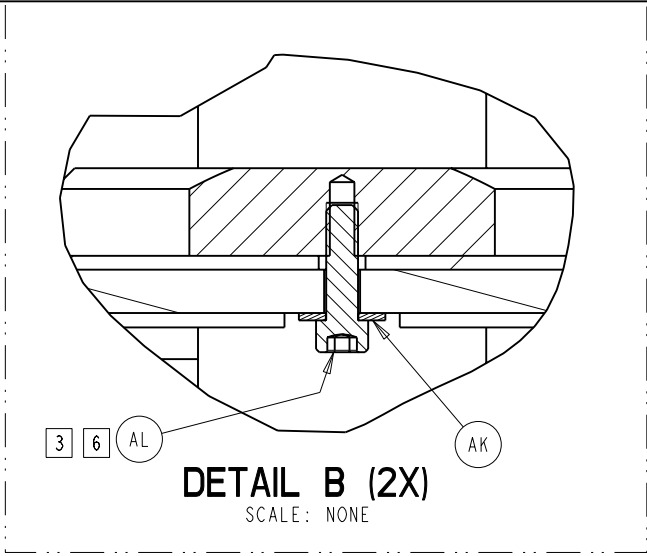


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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

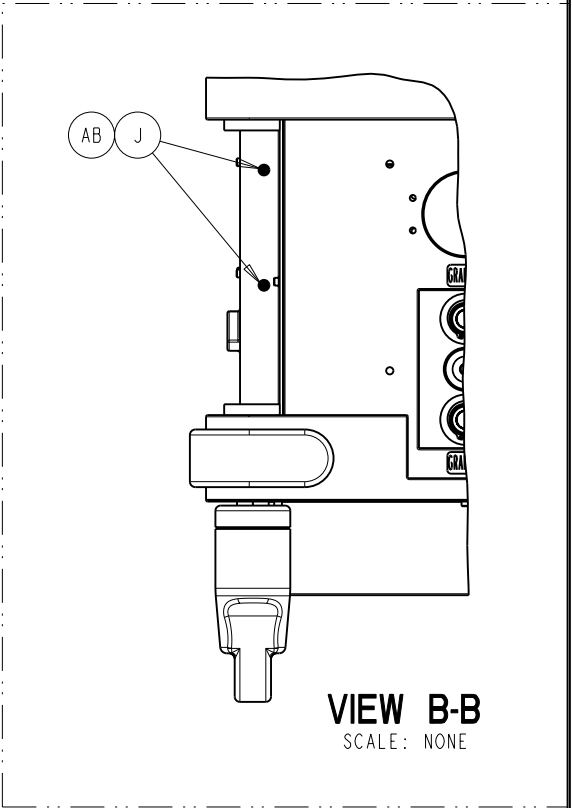
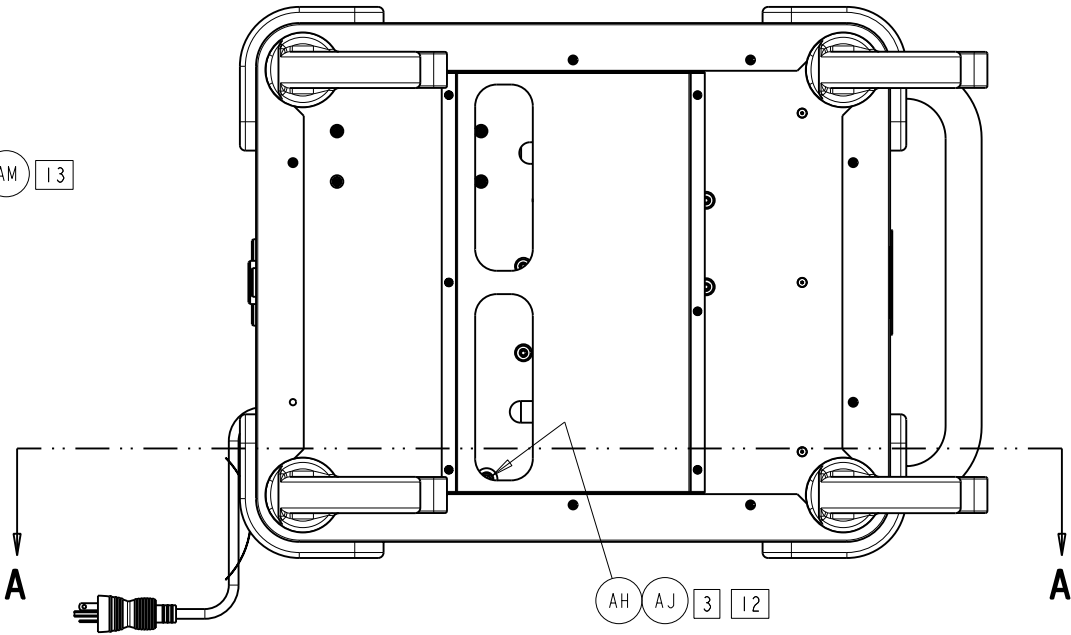
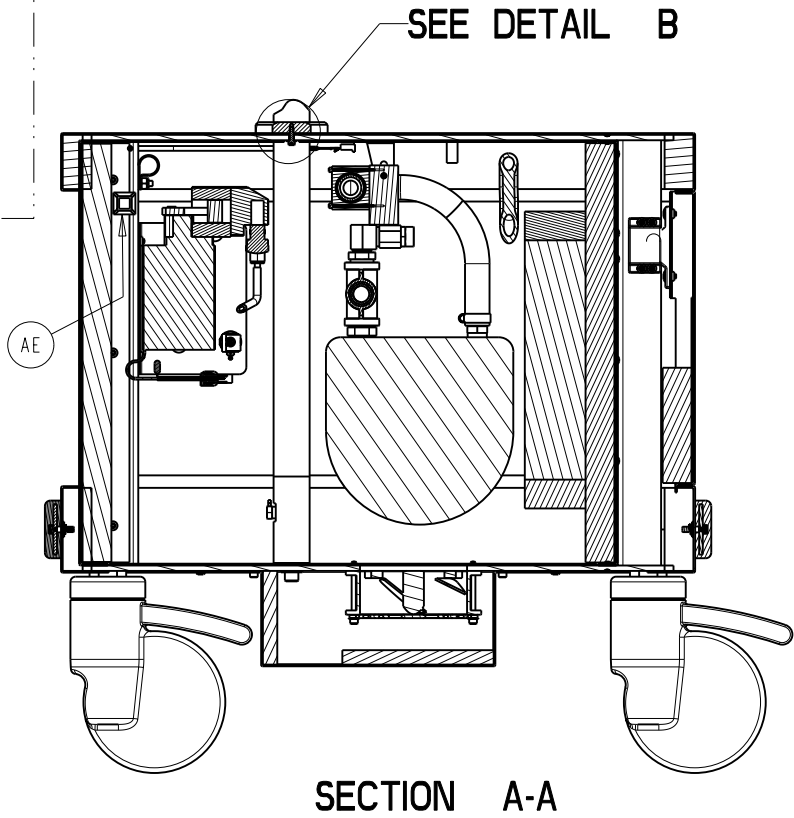


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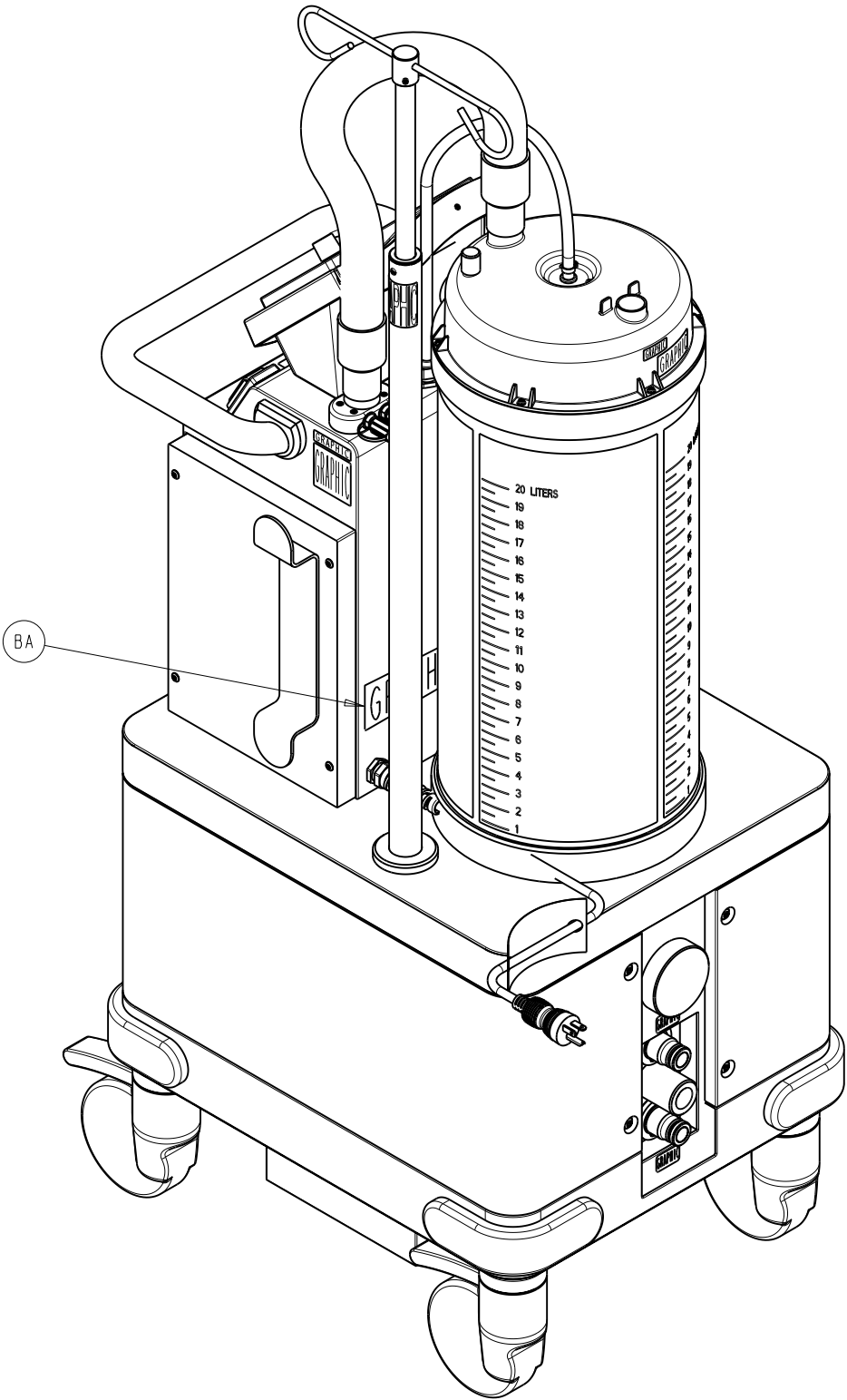
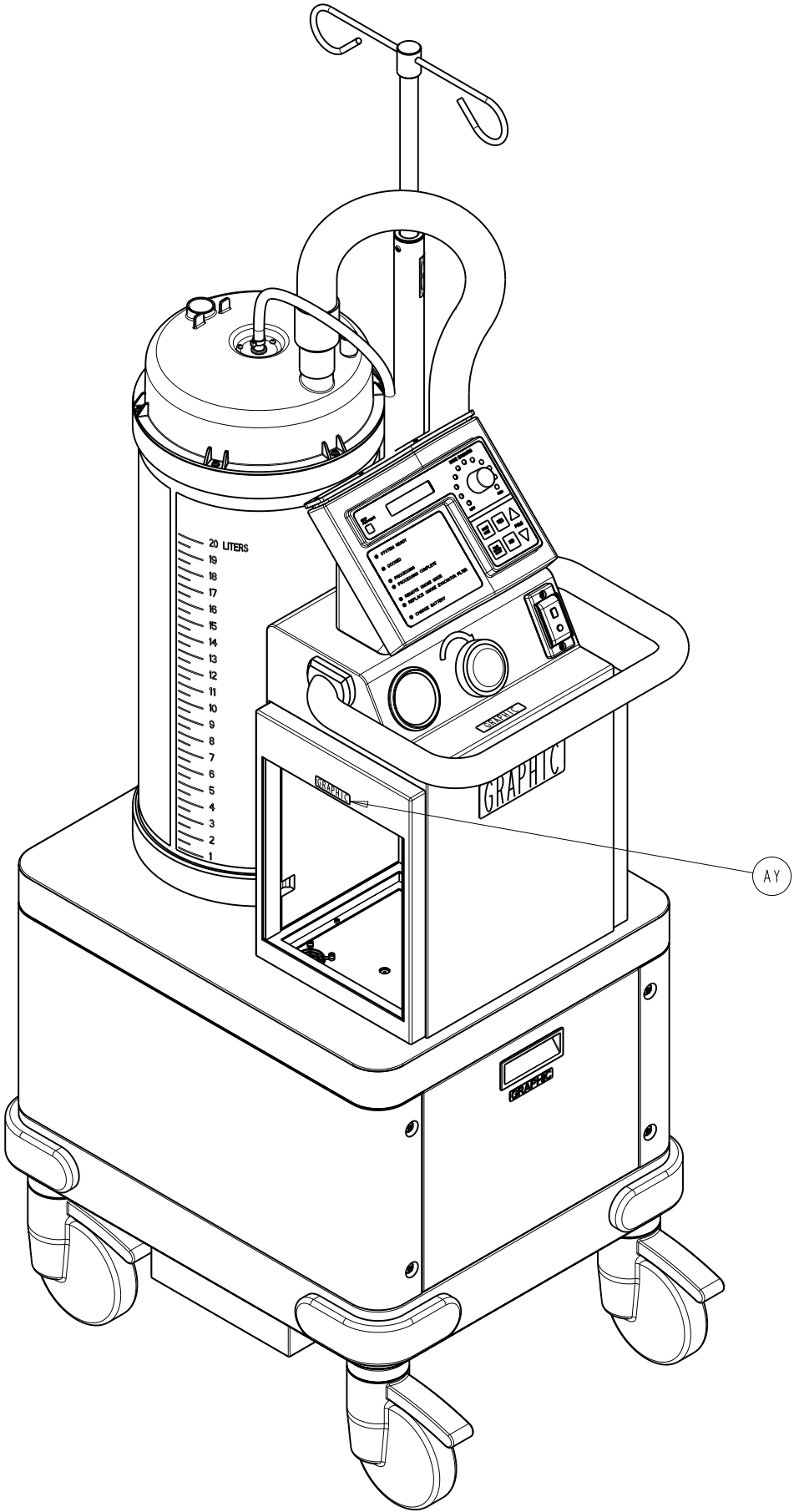
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B



FORM NO. 19fm009, Rev. NONE		SHEET 3 OF 6	
stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH	DATE 12-13 02	TITLE ROVER ASSEMBLY	
MFG APPROVAL S/ A. BEVERAGE	DATE 1-03		
QA APPROVAL S/ S. HORVATH	DATE 1-03		
PART NO. 0700-902-010		REV. NONE	
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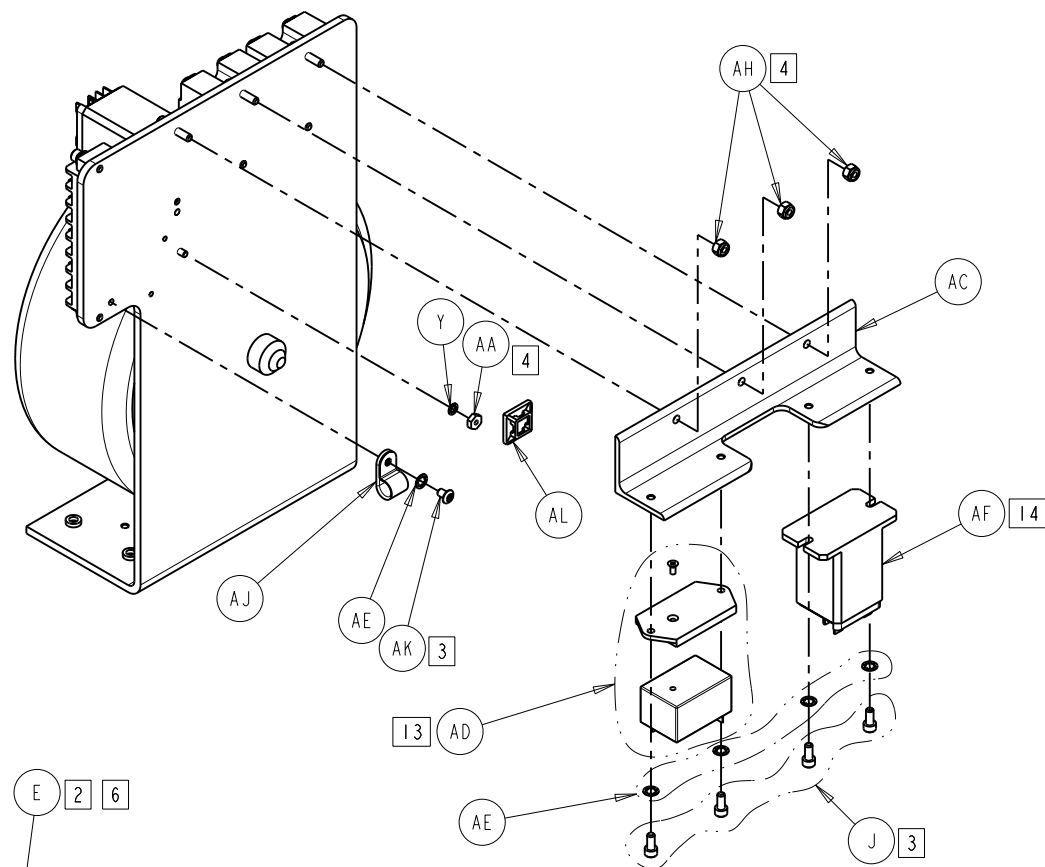
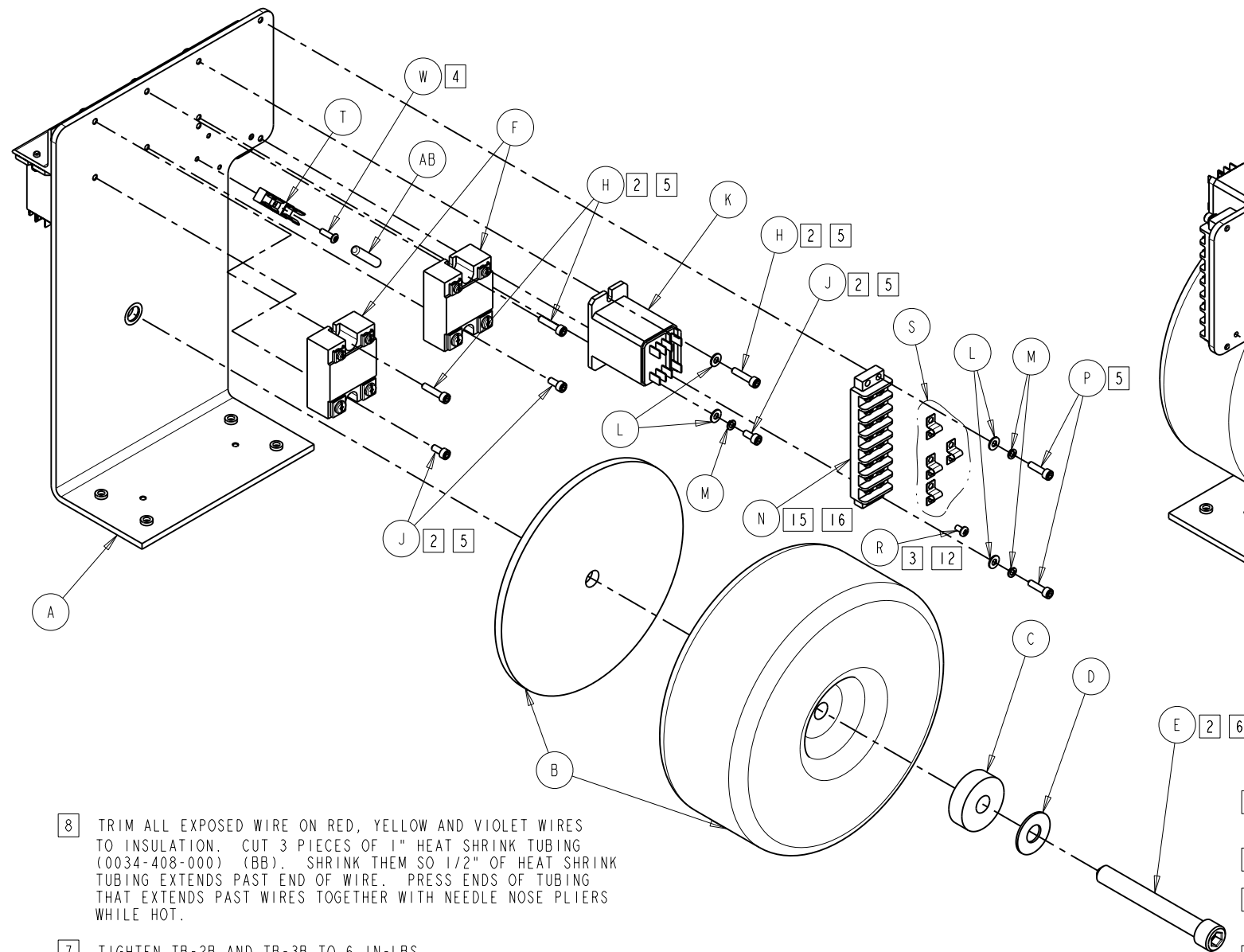


NOTES :

FORM NO. 19im009, Rev. NONE	SHEET 5 OF 6
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-13-02	TITLE ROVER ASSEMBLY	
MFG APPROVAL S/ A. BEVERAGE	DATE 1-03		
QA APPROVAL S/ S. HORVATH	DATE 1-03		
PART NO. 0700-902-010		REV. NONE	
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											DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION
Item	Part No.	Part Name	Qty.	Item	Part No.	Part Name	Qty.	Item	Part No.	Part Name	Qty.				
A	0700-001-031	MOUNTING BRACKET	1	R	0050-038-000	PAN HEAD SCREW 6-32 X 1/4	1	AL	0058-334-000	ADHESIVE CABLE MOUNT	1				
B	0700-001-032	TOROIDAL ISOLATION TRANSFORMER	1	S	0034-425-000	TERMINAL BLOCK JUMPER	4	AM	0034-421-000	BLOCK SPADE TERMINAL 12-10 AWG	(NOT SHOWN)	3			
C	0052-504-000	SPACER	1	T	0700-001-039	FUSE BLOCK HOLDER	1	AN	0039-275-000	WHITE WIRE, 12 AWG	(NOT SHOWN)	3 IN			
D	0011-506-000	FLAT WASHER (1/2)	1	W	0004-553-000	BUTTON HEAD SCREW 6-32 X 1/2	1	AP	0034-413-000	CONNECTOR	(NOT SHOWN)	1			
E	0004-537-000	SHCS 1/2-13 X 4	1	Y	0013-005-000	LOCK WASHER #6 INTERNAL	1	AR	0034-415-000	CRIMP CONTACT 20-14 AWG	(NOT SHOWN)	2			
F	0700-001-033	SOLID-STATE RELAY	2	AA	0015-001-000	HEX NUT 6-32	1	AS	0034-046-000	SHRINK TUBE	(NOT SHOWN)	0.6 FT			
H	0004-538-000	SHCS 8-32 X 3/4	3	AB	0034-424-000	FUSE 6.2A, 250V	1	AT	0034-422-000	BLOCK SPADE TERMINAL 12-10 AWG	(NOT SHOWN)	1			
J	0004-525-000	SHCS 8-32 X 3/8	7	AC	0700-001-041	RELAY MOUNTING BRACKET	1	AW	0058-330-000	CABLE TIE	(NOT SHOWN)	3			
K	0700-001-034	RELAY	1	AD	0700-001-038	TIME DELAY RELAY	1	AY	0034-420-000	RING TERMINAL 16-14 AWG	(NOT SHOWN)	1			
L	0011-510-000	FLAT WASHER (#8)	4	AE	0013-012-000	LOCK WASHER #8 INTERNAL	5	BA	0034-423-000	FLANGED SPADE TERMINAL 16-14 AWG	(NOT SHOWN)	4			
M	0012-015-000	SPLIT LOCK WASHER #8	3	AF	0700-001-037	POWER RELAY	1	BB	0034-408-000	HEAT SHRINK TUBING	(NOT SHOWN)	3 IN			
N	0700-001-036	TERMINAL BLOCK	1	AH	0016-014-000	LOCKNUT, NYLON INSERT 8-32	3	BC	0034-419-000	QUICK DISCONNECT TERMINAL	(NOT SHOWN)	2			
P	0004-522-000	SHCS 8-32 X 5/8	2	AJ	0058-210-000	NYLON LOOP STRAP	1	BD	0039-008-000	WIRE	(NOT SHOWN)	1.1 FT			
				AK	0004-548-000	BHCS 8-32 X 1/4	1	BE	0700-001-035	ROVER RELAY CABLE ASSEMBLY	(NOT SHOWN)	1			



- 8 TRIM ALL EXPOSED WIRE ON RED, YELLOW AND VIOLET WIRES TO INSULATION. CUT 3 PIECES OF 1" HEAT SHRINK TUBING (0034-408-000) (BB). SHRINK THEM SO 1/2" OF HEAT SHRINK TUBING EXTENDS PAST END OF WIRE. PRESS ENDS OF TUBING THAT EXTENDS PAST WIRES TOGETHER WITH NEEDLE NOSE PLIERS WHILE HOT.

- 7 TIGHTEN TB-2B AND TB-3B TO 6 IN-LBS.
ALL OTHERS SHOULD BE HAND TIGHT.

- 6 TORQUE TO 240 IN-LBS.

- 5 TORQUE TO 17 IN-LBS.

- 4 TORQUE TO 12 IN-LBS.

- 3 TORQUE TO 6 IN-LBS.

- 2 APPLY LOCTITE 242.

- 13 MAKE SURE TERMINALS 3 AND 4 OF K5 ARE ON THE RIGHT. CONNECT THE TERMINALS LABELED K5 ON THE ROVER RELAY ASSEMBLY TO THE K5 RELAY. ALL WIRES AND TERMINALS ARE LABELED.

- 12 REPLACE SCREW IN BOTTOM-RIGHT POSITION (8B) OF TERMINAL BLOCK WITH (0050-038-000).

- II PLACE TERMINAL BLOCK JUMPERS TO THE FOLLOWING TERMINALS; (1B-2B), (2B-3B), (4B-5B) AND (6B-7B).

- 10 INSTALL ONTO RIGHT FAST-ON LUG OF FUSEHOLDER.

- 9 INSTALL QUICK DISCONNECT TERMINAL TO BLACK WIRE.

- 20 GREEN/YELLOW GROUND WIRE SHOULD BE ATTACHED AS SHOWN ON
PRINT 0700-902-010.

- 19 ATTACH REMAINING WHITE WIRE FROM TRANSFORMER TO RELAY K2 POSITION 2.

- 18 THE BLACK/WHITE TWISTED PAIR WITH THE CONNECTOR WILL BE ATTACHED TO 1LJ4 (0700-001-111) ROVER MAIN HARNESS ASSEMBLY.


- 17 CONNECT A 3" LONG WHITE WIRE TO RELAY K1 POSITION 2 AND RELAY K2 POSITION 2.

- 16 ATTACH THE WIRES FROM THE TRANSFORMER TO THE TERMINAL BLOCK IN THE FOLLOWING MANNER; (GRAY TO TB-2A), (BLUE TO TB-4A), (ORANGE TO TB-5A), (BLACK TO TB-6A), (BROWN TO TB-7A) THEN TORQUE THE TERMINAL SCREWS TO 12 IN.-LBS.

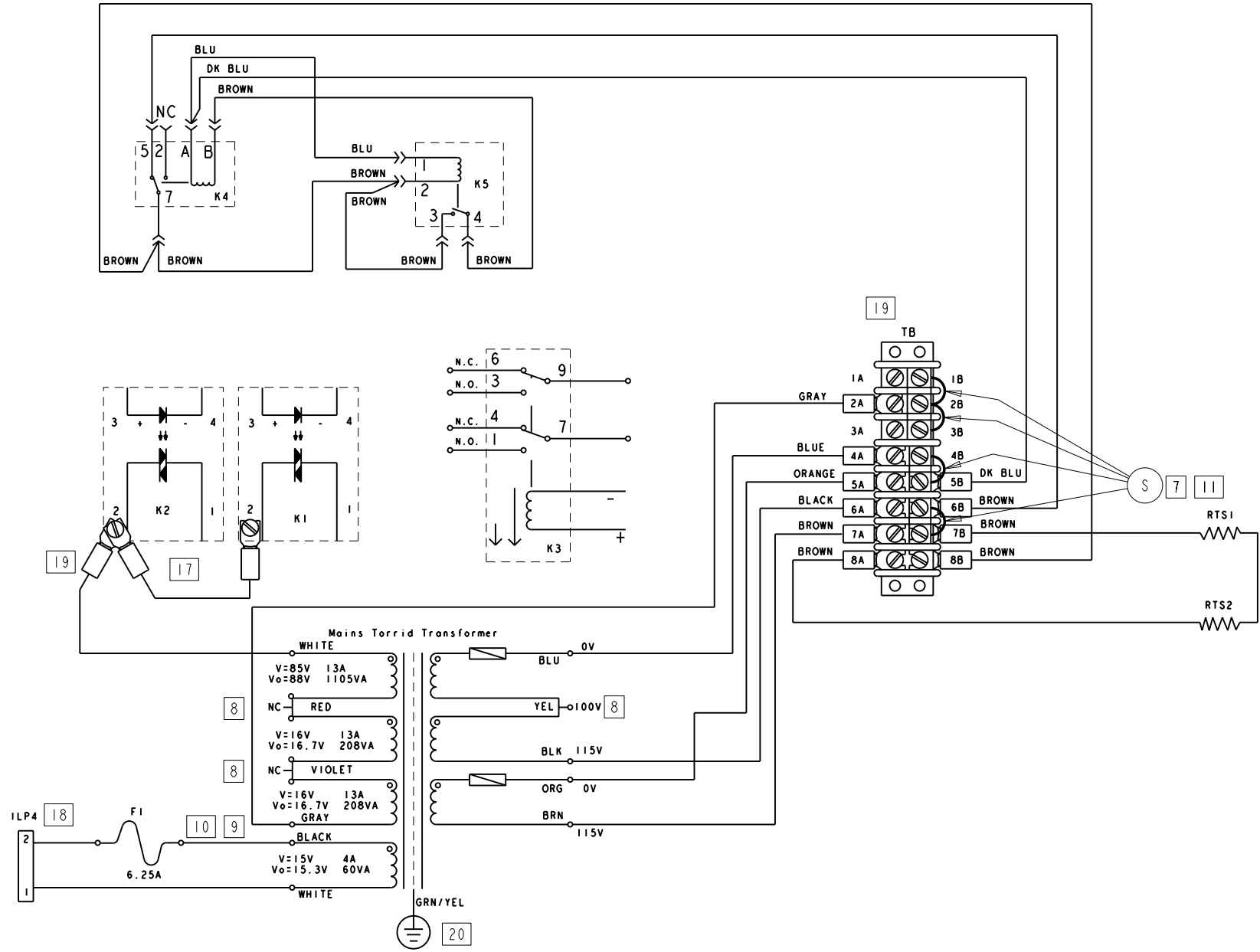
- 15 CONNECT THE TERMINALS ON THE ROVER RELAY CABLE ASSEMBLY TO THE TERMINAL B BLOCK. ALL WIRES AND TERMINALS ARE LABELED. TORQUE TO 12 IN-LBS.

- 14 MAKE SURE TERMINALS 7 AND A OF K4 ARE ON THE RIGHT. CONNECT THE TERMINALS LABELED K4 ON THE ROVER RELAY CABLE ASSEMBLY (0700-001-035) TO THE K4 RELAY. ALL WIRES AND TERMINALS ARE LABELED.

NOTES: 1. APPLIES TO ROVER MODEL 700-1 (LEVEL SENSOR).

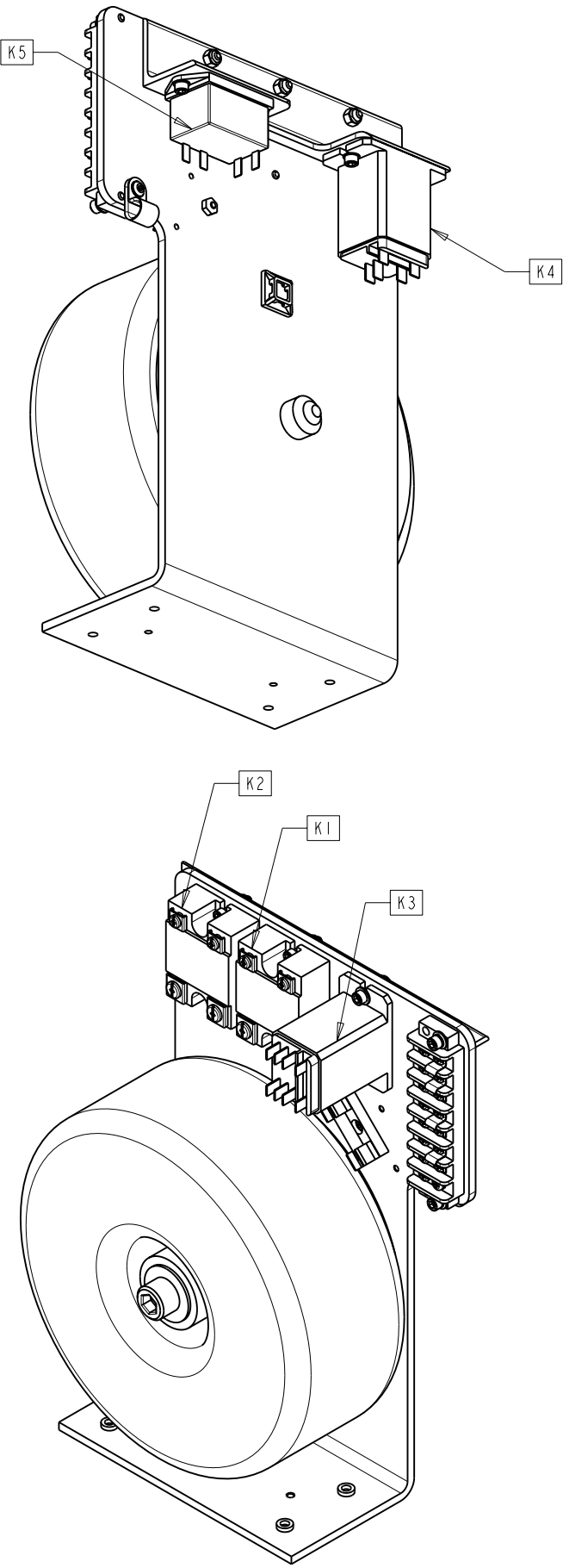
FORM NO. 19fm009, Rev. NONE		SHEET 1 OF 2	
 <p>STRYKER INSTRUMENTS</p> <p>4100 E. MILHAM KALAMAZOO, MI. 49001</p>			
DRAWN BY A. GREENHALGH	DATE 12-16 02	TITLE ROVER TRANSFORMER ASSEMBLY	
MFG APPROVAL S/ A.BEVERAGE	DATE 1-03		
QA APPROVAL	DATE	PART NO. 0700-902-030	REV. NONE
S/ S.HORVATH	1-03		
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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



SCHEMATIC
SCALE: NONE

NOTES:



FORM NO. 19im009, Rev. NONE	SHEET 2 OF 2
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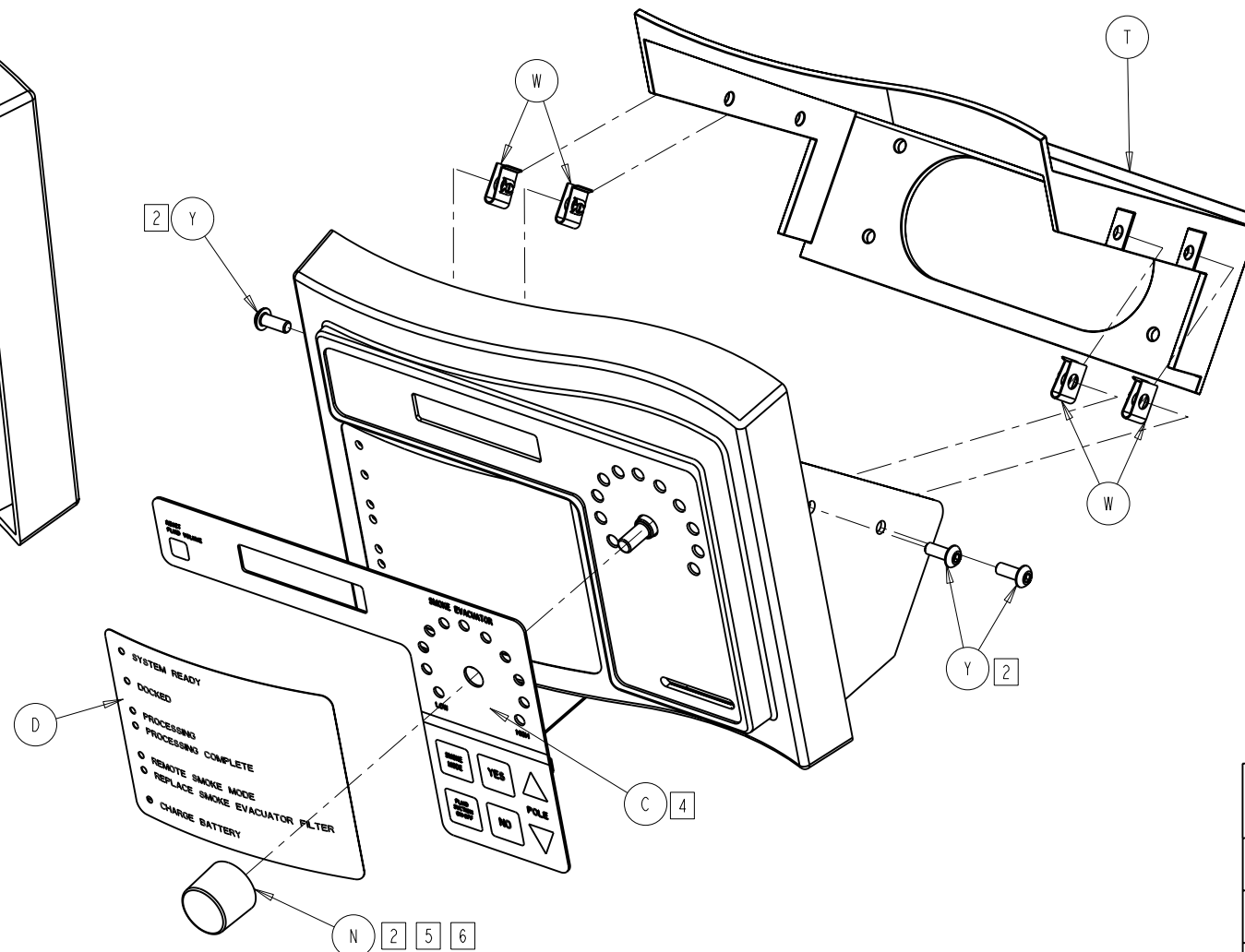
stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE ROVER TRANSFORMER ASSEMBLY	
MFG APPROVAL S/ A. BEVERAGE	DATE 1-03		
QA APPROVAL S/ S. HORVATH	DATE 1-03		
		PART NO. 0700-902-030	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			

This exploded view diagram illustrates the assembly of the HP Z840 G2 Workstation chassis. The main components and their assembly points are labeled as follows:

- A:** The main chassis frame.
- B:** The top cover plate.
- E:** The front bezel.
- F:** The front panel.
- H:** Screws used for the front panel.
- J:** The rear panel.
- K:** The rear cover plate.
- S:** Screws used for the top cover.

The diagram shows the internal layout of the workstation, including the motherboard, RAM modules, storage drives, and power supply. Dashed lines indicate the assembly path for each component.

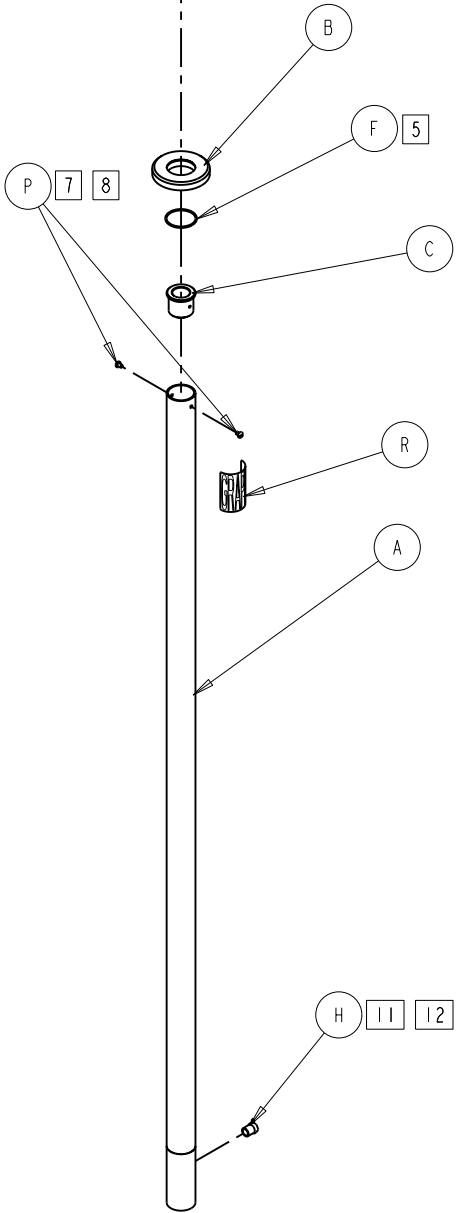
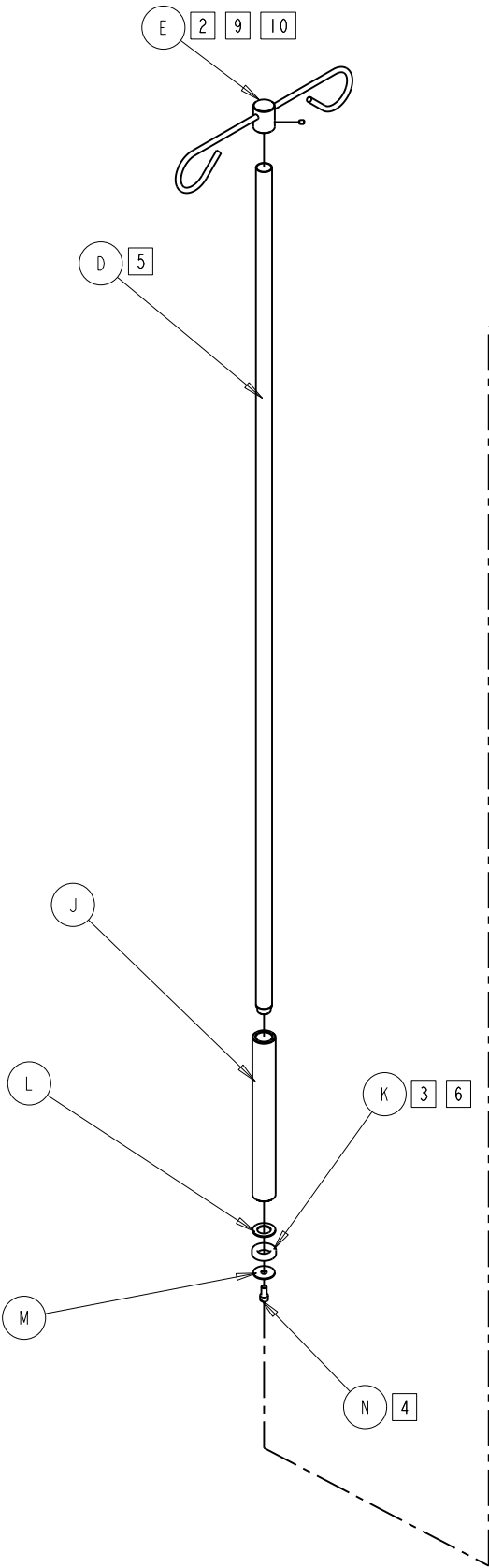
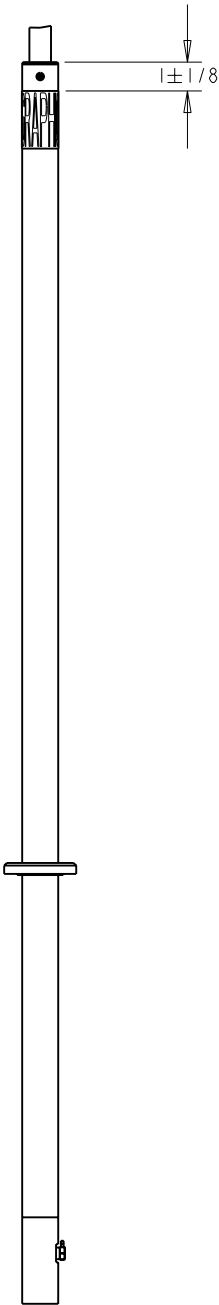
- NOTES:



<div> <div>FORM NO.</div> <div>19f0009, Rev. NONE</div> </div>		<div> <div>SHEET</div> <div>1 OF 1</div> </div>	
<div> <div> <div>stryker</div> <div>INSTRUMENTS</div> <div>4100 E. MILHAM KALAMAZOO, MI. 49001</div> </div> </div>			
<div>DRAWN BY</div> <div>A. GREENHALGH</div>	<div>DATE</div> <div>12-16 02</div>	<div>TITLE</div> <div>USER INTERFACE PANEL ASSEMBLY</div>	
<div>MFG APPROVAL</div> <div>S/A. BEVERAGE</div>	<div>DATE</div> <div>I-03</div>	<div>REV.</div>	
<div>QA APPROVAL</div> <div>S/S. HORVATH</div>	<div>DATE</div> <div>I-03</div>	<div>PART NO.</div> <div>0700-902-050</div>	<div>REV.</div> <div>A</div>
<div>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT-MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</div>			

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

Item	Part No.	Part Name	Qty.
A	0700-001-061	OUTER TUBE WELDMENT	1
B	0700-001-062	POWER IV POLE RING	1
C	0700-001-064	POWER IV POLE BUSHING	1
D	0700-001-065	IV POLE INNER TUBE WELDMENT	1
E	0700-001-066	IV POLE HOOK W/SET SCREW	1
F	0045-265-000	O-RING	1
H	0048-193-000	PNEUMATIC ELBOW FITTING	1
J	0700-001-063	POWER IV POLE SPACER	1
K	0030-059-000	U-CUP SEAL	1
L	0700-001-067	BACKUP RING	1
M	0011-505-000	FLAT WASHER 9/32 ID	1
N	0004-506-000	SOCKET HEAD CAP SCREW 1/4-20 X 1/2	1
P	0050-055-000	PAN HEAD SCREW 6-32 X 3/16	2
R	0700-001-725	POWER IV POLE LABEL	1
S	0044-021-000	TEFLON TAPE, 1/4" (NOT SHOWN)	AR
T	0072-005-031	SILICONE GREASE (NOT SHOWN)	AR
W	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR



- [12] BARB ON PNEUMATIC ELBOW FITTING MUST BE POINTING UPWARD.
- [11] APPLY TEFLON TAPE THEN THREAD INTO HOLE AND TIGHTEN.
- [10] TORQUE SET SCREW TO 25 IN-LBS.
- [9] APPLY LOCTITE 222 TO SET SCREW.
- [8] TORQUE TO 17 IN-LBS.
- [7] APPLY LOCTITE 222.
- [6] APPLY A GENEROUS AMOUNT OF SILICONE GREASE TO SEAL.
- [5] APPLY THIN LAYER OF SILICONE GREASE TO COVER ABOUT 12" FROM THE BOTTOM.
- [4] APPLY LOCTITE 222 AND TORQUE TO 75 IN-LBS.
- [3] GROOVE ON U-CUP SEAL MUST FACE FLAT WASHER (0700-001-067).
- [2] TORQUE TO 30 IN-LBS.

1. APPLIES TO ROVER MODELS 700-1 (PRESSURE TRANSDUCER) AND 700-1 (LEVEL SENSOR).

NOTES:

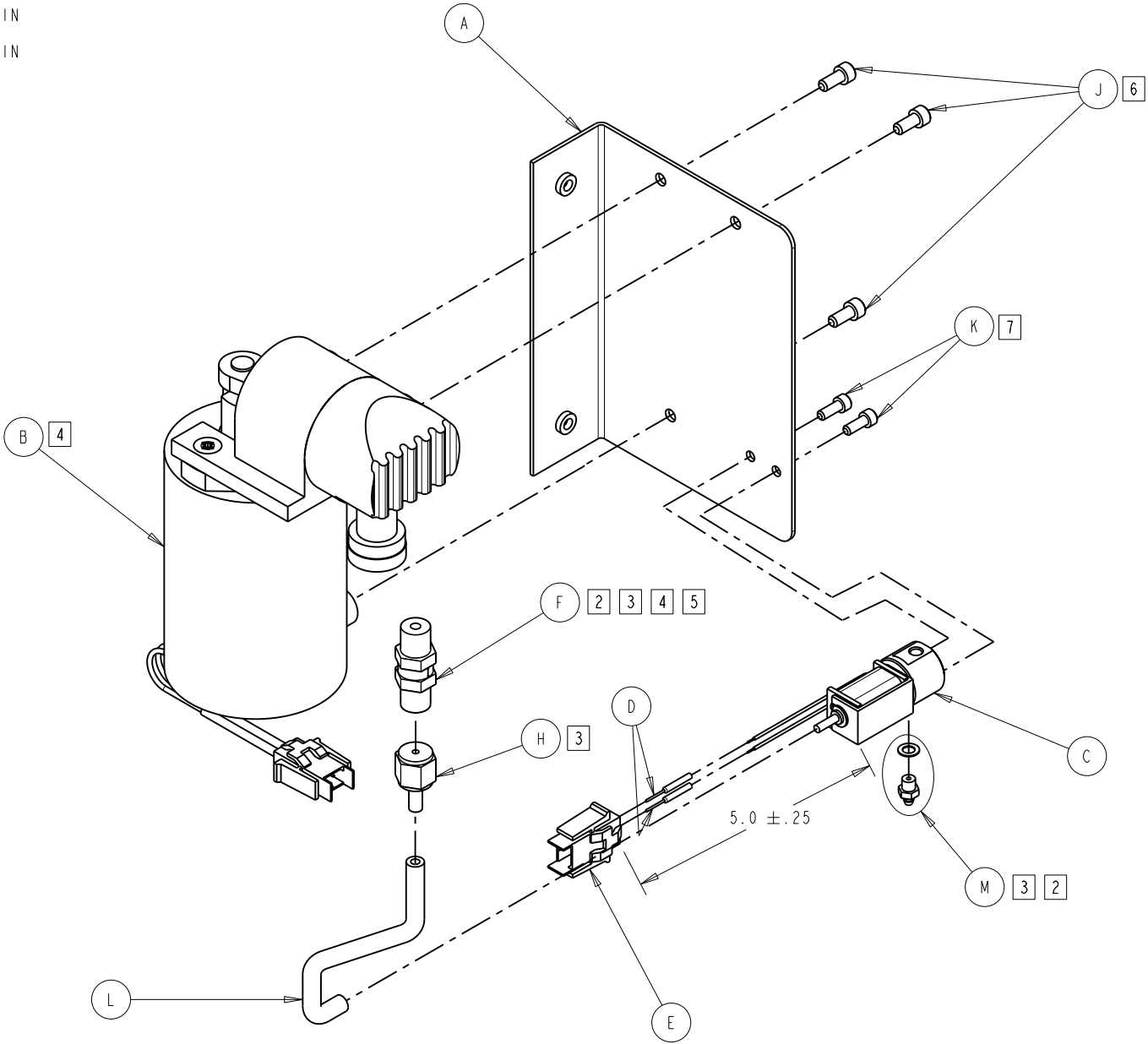
FORM NO. 191m009, Rev. NONE	SHEET 1 OF 1
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stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE POWER IV POLE ASSEMBLY	
MFG APPROVAL S/ A. BEVERAGE	DATE 1-03		
QA APPROVAL S/ S. HORVATH	DATE 1-03	PART NO. 0700-902-060	REV. NONE

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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

Item	Part No.	Part Name	Qty.
A	0700-001-071	MOUNTING BRACKET	1
B	0700-004-055	PNEUMATIC COMPRESSOR ASSEMBLY	1
C	0700-001-072	PNEUMATIC SOLENOID	1
D	0034-418-000	CRIMP CONTACT 26-24 AWG	2
E	0034-411-000	2 CONDUCTOR PIN HOUSING CONNECTOR	1
F	0061-006-000	CHECK BALL VALVE 1/8"	1
H	0048-205-000	BARBED FITTING 1/8 X 1/8	1
J	0004-525-000	SHCS 8-32 X 3/8	3
K	0004-529-000	SHCS 6-32 X 3/8	2
L	0060-015-000	PNEUMATIC CLEAR TUBING	5 IN
M	0048-194-000	PNEUMATIC BARBED FITTING 10-32	1
N	0060-008-000	PNEUMATIC TUBING (NOT SHOWN)	7 IN
P	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR
R	0044-021-000	TEFLON TAPE, 1/4 (NOT SHOWN)	AR



- [7] APPLY LOCTITE 222 TO THREADS AND TORQUE SCREW TO 17 IN-LBS.
- [6] APPLY LOCTITE 222 TO THREADS AND TORQUE SCREW TO 25 IN-LBS.
- [5] THE FLOW DIRECTION ARROW MUST POINT DOWNWARD (AWAY FROM THE COMPRESSOR).
- [4] CLEAR PLASTIC FROM THREADS OF COMPRESSOR OUTLET PORT BEFORE INSTALLING CHECK VALVE.
- [3] HAND TIGHTEN FOLLOWED BY ONE FULL TURN PAST HAND TIGHTEN.
- [2] APPLY TEFLON TAPE CLOCKWISE TO THREADS.
1. APPLIES TO ROVER MODELS 700-1 (PRESSURE TRANSDUCER) AND 700-1 (LEVEL SENSOR).

NOTES:

FORM NO. 19im009, Rev. NONE	SHEET 1 OF 1
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stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE PNEUMATICS PANEL ASSEMBLY	
MFG APPROVAL S/ A. BEVERAGE	DATE 1-03		
QA APPROVAL S/ S. HORVATH	DATE 1-03		
		PART NO. 0700-902-070	REV. NONE
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Item	Part No.	Part Name	Qty.	Item	Part No.	Part Name	Qty.
A	0700-001-210	CHASSIS ASSEMBLY	1	BA	0058-338-000	NYLON LOOP STRAP	3
B	0058-333-000	NYLON LOOP CLAMP	1	BB	0016-025-000	LOCKNUT, NYLON INSERT 10-32	3
C	0016-320-000	LOCKNUT, NYLON INSERT 6-32	1	BC	0058-336-000	LOOP STRAP, RUBBER CUSHIONED	1
D	0700-001-126	SLAM ACTION LATCH	2	BD	0700-001-119	SILENCER MANIFOLD MOUNTING BRACKET	1
E	0011-052-000	FLAT WASHER (#4)	14	BE	0700-001-155	FLOAT ASSEMBLY	1
F	0004-540-000	SHCS 4-40 X 3/8	8	BF	0045-267-000	O-RING	1
H	0700-001-127	UPPER SKIRT	1	BH	0700-001-170	CANISTER CAP ASSEMBLY	1
J	0700-001-128	SOUND DAMPENING FOAM	1	BJ	0004-546-000	SHCS 4-40 X 1/2	6
K	0700-001-310	MACERATOR PUMP / CANISTER ASSEMBLY	1	BK	0060-011-000	BRAIDED TUBING 1/4" ID	55 IN
L	0058-328-000	HOSE CLAMP	6	BL	0058-327-000	HOSE CLAMP	2
M	0700-001-140	FLUID LEVEL TRANSDUCER ASSEMBLY	1	BM	0700-001-160	SILENCER MANIFOLD ASSEMBLY	1
N	0011-507-000	FLAT WASHER (1/4)	3	BN	0011-512-000	FLAT WASHER (#10)	2
P	0012-012-000	LOCK WASHER (1/4)	3	BP	0012-014-000	SPLIT LOCK WASHER #10	2
R	0004-534-000	SHCS 1/4-20 X 7/8	4	BR	0004-526-000	SHCS 10-32 X 1/2	2
S	0058-319-000	BUSHING	1	BS	0048-218-000	HEX PIPE FITTING	1
T	0058-320-000	BUSHING	1	BT	0048-214-000	PIPE FITTING ELBOW 3/8	1
W	0058-321-000	BUSHING	1	BW	0700-001-131	VACUUM RELIEF VALVE	1
Y	0700-001-218	SNAP BUSHING, MODIFIED	1	BY	0058-323-000	HOSE CLAMP	1
AA	0700-001-111	ROVER MAIN HARNESS ASSY	1	CA	0060-014-000	WIRE REINFORCED TUBING	16.25 IN
AB	0700-001-113	CONTROLLER TO TOP PANEL CABLE	1	CB	0700-001-117	VACUUM HOSE	1
AC	0700-001-121	PCB TO 12V BATTERY CABLE	1	CC	0700-027-001	VACUUM HOSE FOAM	1
AD	0700-001-122	MACERATOR PUMP TO ISOLATION RELAY CABLE	1	CD	0058-339-000	HOSE CLAMP	1
AE	0700-001-123	PROTECTIVE EARTH GROUND CABLE	1	CE	0700-001-150	EXHAUST PLENUM ASSEMBLY	1
AF	0700-001-124	TRANSFORMER TO CIRCUIT BREAKER CABLE	1	CF	0004-004-000	SHCS 8-32 X 1/4	6
AH	0700-001-125	PNEUMATICS PANEL CABLE ASSEMBLY	1	CH	0700-001-145	TOWER RIGHT PANEL ASSEMBLY	1
AJ	0700-001-410	TOWER ASSEMBLY	1	CJ	0004-555-000	BHCS 10-24 X 1-1/2	4
AK	0013-018-000	LOCK WASHER #10 EXTERNAL	2	CK	0700-001-135	SIDE PANEL ASSEMBLY	2
AL	0004-535-000	SHCS 10-32 X 3/8	8	CL	0004-552-000	BHCS 1/4-20 X 1-1/2	4
AM	0058-335-000	LOOP STRAP, RUBBER CUSHIONED	1	CM	0004-551-000	BHCS 1/4-20 X 3/4	4
AN	0011-511-000	FLAT WASHER (#10)	1	CN	0280-004-097	POWER CORD WARNING LABEL	1
AP	0004-521-000	SHCS 10-32 X 5/8	1	CP	0044-049-000	TEFLON TAPE, 1/2"	AR
AR	0058-334-000	ADHESIVE CABLE MOUNT	7	CR	0072-002-003	LOCTITE 222	AR
AS	0700-001-430	ROVER BATTERY ASSEMBLY	1	CS	0072-002-061	RTV 108	AR
AT	0700-027-000	FLUID SUCTION HEPA FILTER ASSEMBLY	1	CT	0072-002-032	RTV 162	AR
AW	0700-001-116	VACUUM HOSE	0.25	CW	0034-409-000	SLIT-CONVOLUTED CONDUIT	7.5 IN
AY	0700-001-190	FRONT PANEL ASSEMBLY	1	CY	0058-342-000	WIRE TIE	1
				DA	0072-002-056	LOCTITE 425	AR

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

- 13

PLACE THE CANISTER CAP ONTO THE CANISTER ASSEMBLY SO THE TRANSDUCER SUPPORT ON THE CAP FITS OVER THE FLUID LEVEL TRANSDUCER ASSEMBLY ROD.
- 12

PLACE FLOAT ASSEMBLY (BUMPS ON FLOAT ARE FACING DOWN), ONTO THE FLUID LEVEL TRANSDUCER ROD (0700-001-140) IN THE CANISTER.
- 11

CUT HOSE TO APPROXIMATELY 8". CONNECT TUBING TO NYLON BARBED FITTING ON THE SILENCER MANIFOLD ASSEMBLY. CONNECT OTHER END TO BARBED FITTING ON THE OUTLET OF THE VACUUM PUMP.
- 10

PLACE A CUFF OF THE VACUUM HOSE (0700-027-000) ONTO THE SUCTION COUPLING ASSEMBLY INSIDE THE RIGHT SIDE OF THE TOWER AND THE OTHER CUFF TO THE FLUID HEPA FILTER IN THE FILTER PLENUM. NOTE: MAKE SURE VACUUM HOSE DOES NOT PUSH AGAINST TRANSFORMER TO CIRCUIT BREAKER CABLE AND PULL THE TERMINALS FROM THE POWER SWITCH. IF NECESSARY MOVE ADHESIVE CABLE MOUNTS SECURING CABLE.
- 9

CONNECT 1LJ6 (PCB TO 12V BATTERY CABLE) TO MATING CONNECTION OF BATTERY SWITCH CABLE ASSEMBLY (CONNECTED TO ROCKER SWITCH). THEN CONNECT BATTERY HARNESS CONNECTOR TO REMAINING CONECTION OF THE BATTERY SWITCH CABLE ASSEMBLY.
- 8

STAGGER THE SCREWS ON THE HOSE CLAMPS SO THEY ARE NOT RIGHT NEXT TO EACH OTHER.
- 7

APPLY TEFLON TAPE CLOCKWISE TO THREADS.
- 6

TORQUE TO 35 IN-LBS.
- 5

TORQUE TO 25 IN-LBS.
- 4

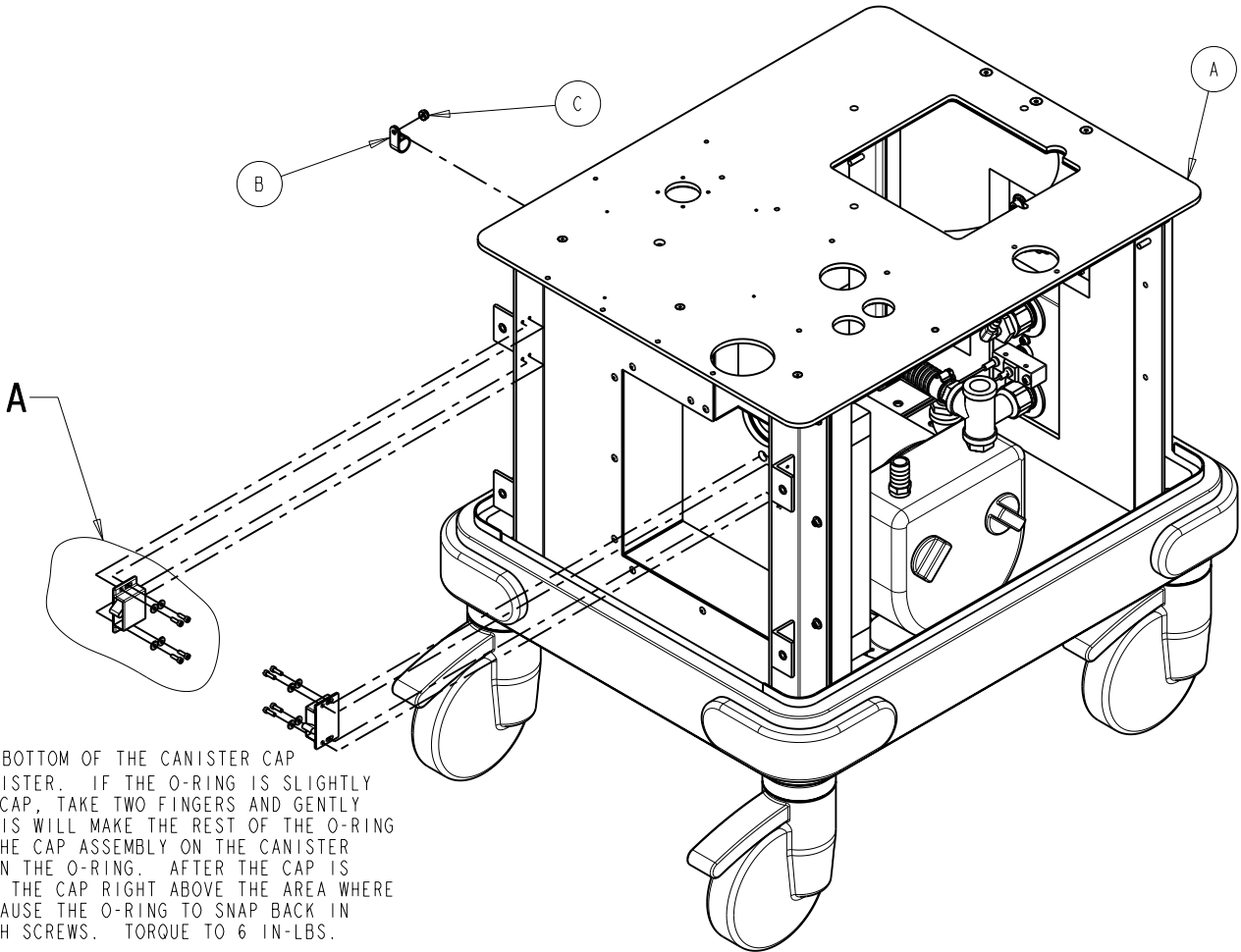
TORQUE TO 6 IN-LBS.
- 3

APPLY LOCTITE 425.
- 2

APPLY LOCTITE 222.
1.

APPLIES TO ROVER MODELS 700-1 AND 700-3 (LEVEL SENSOR).

SEE DETAIL



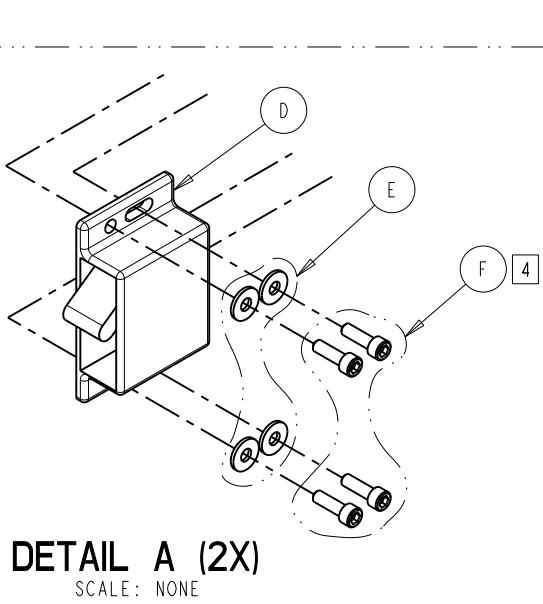
- 15

PLACE O-RING AROUND THE LIP ON THE BOTTOM OF THE CANISTER CAP ASSEMBLY, BEFORE PLACING ON THE CANISTER. IF THE O-RING IS SLIGHTLY OVERSIZED AND WILL NOT STAY ON THE CAP, TAKE TWO FINGERS AND GENTLY PULL ON ONE SIDE OF THE O-RING. THIS WILL MAKE THE REST OF THE O-RING FIT SNUGLY AROUND THE CAP. PLACE THE CAP ASSEMBLY ON THE CANISTER WHILE MAINTAINING GENTLE PRESSURE ON THE O-RING. AFTER THE CAP IS SITTING ON THE CANISTER, GENTLY TAP THE CAP RIGHT ABOVE THE AREA WHERE ANY O-RING IS VISIBLE. THIS WILL CAUSE THE O-RING TO SNAP BACK IN UNDER THE CAP. THEN SECURE CAP WITH SCREWS. TORQUE TO 6 IN-LBS.

- 14

ADJUST VACUUM RELIEF VALVE ON INLET OF VACUUM PUMP FOR A READING OF BETWEEN 19 AND 20 IN-HG. NOTE: THE VACUUM GAUGE HAS TO BE SET FOR MAXIMUM VACUUM AND VERIFY THAT THERE ARE NO VACUUM LEAKS IN THE SYSTEM FOR RELIEF VALVE ADJUSTMENT TO BE ACCURATE.

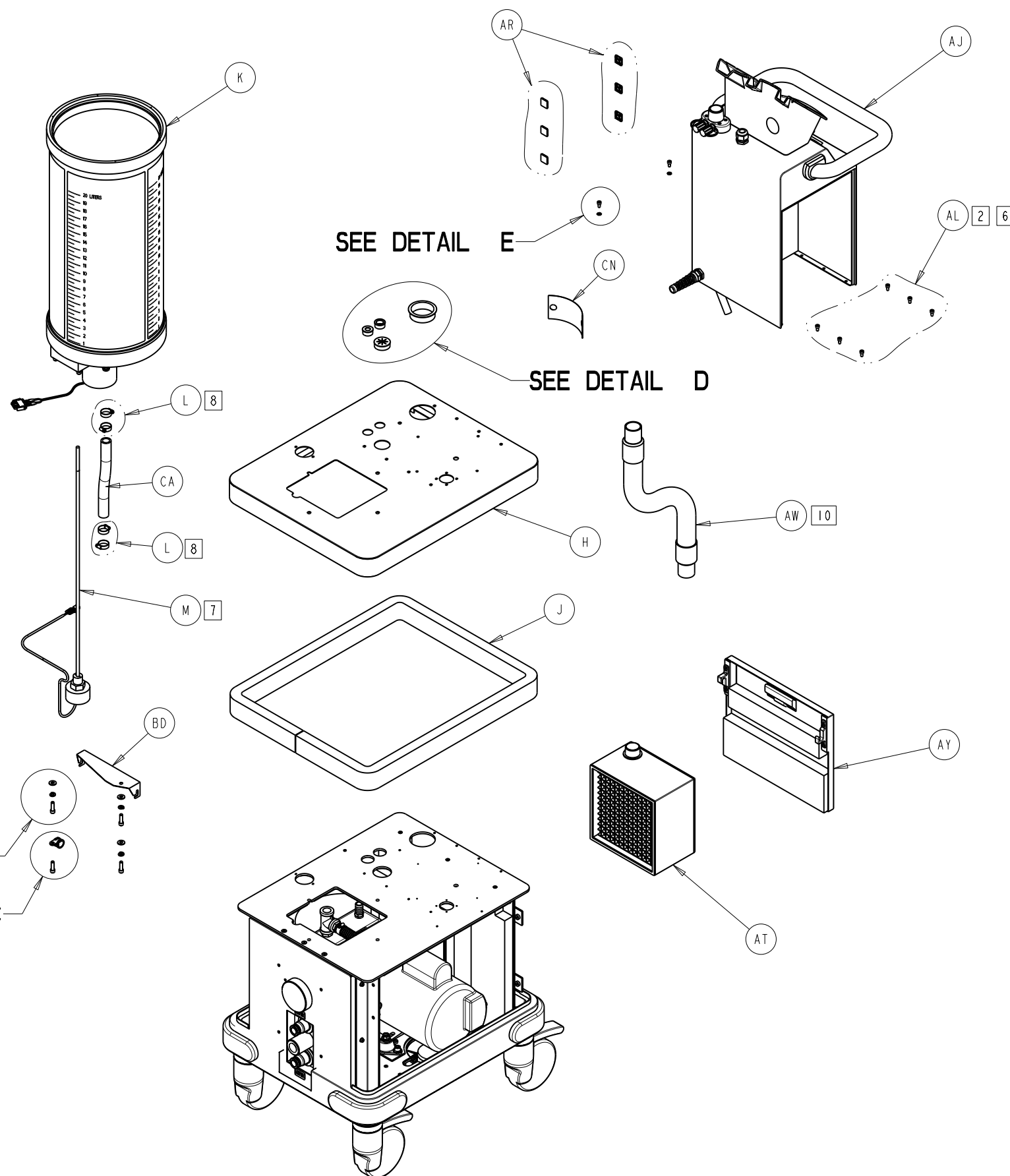
NOTES:



FORM NO. 191m009, Rev. NONE		SHEET 1 OF 4	
stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE BASE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03	PART NO. 0700-902-110	REV. NONE
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NOTES:



DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

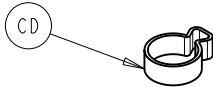
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SCALE: NONE

FORM NO. 19fm009, Rev. NONE		SHEET 2 OF 4
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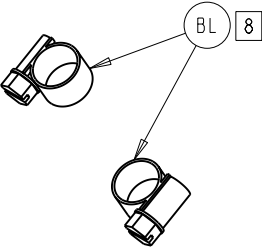
<div><div>stryker</div><div>INSTRUMENTS</div><div>4100 E. MILHAM KALAMAZOO, MI. 49001</div></div>			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE BASE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03	PART NO. 0700-902-110	
QA APPROVAL S/S. HORVATH	DATE 2-03		
		REV NON	

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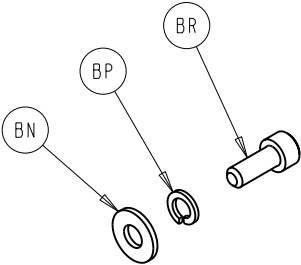
DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



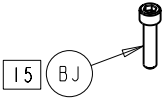
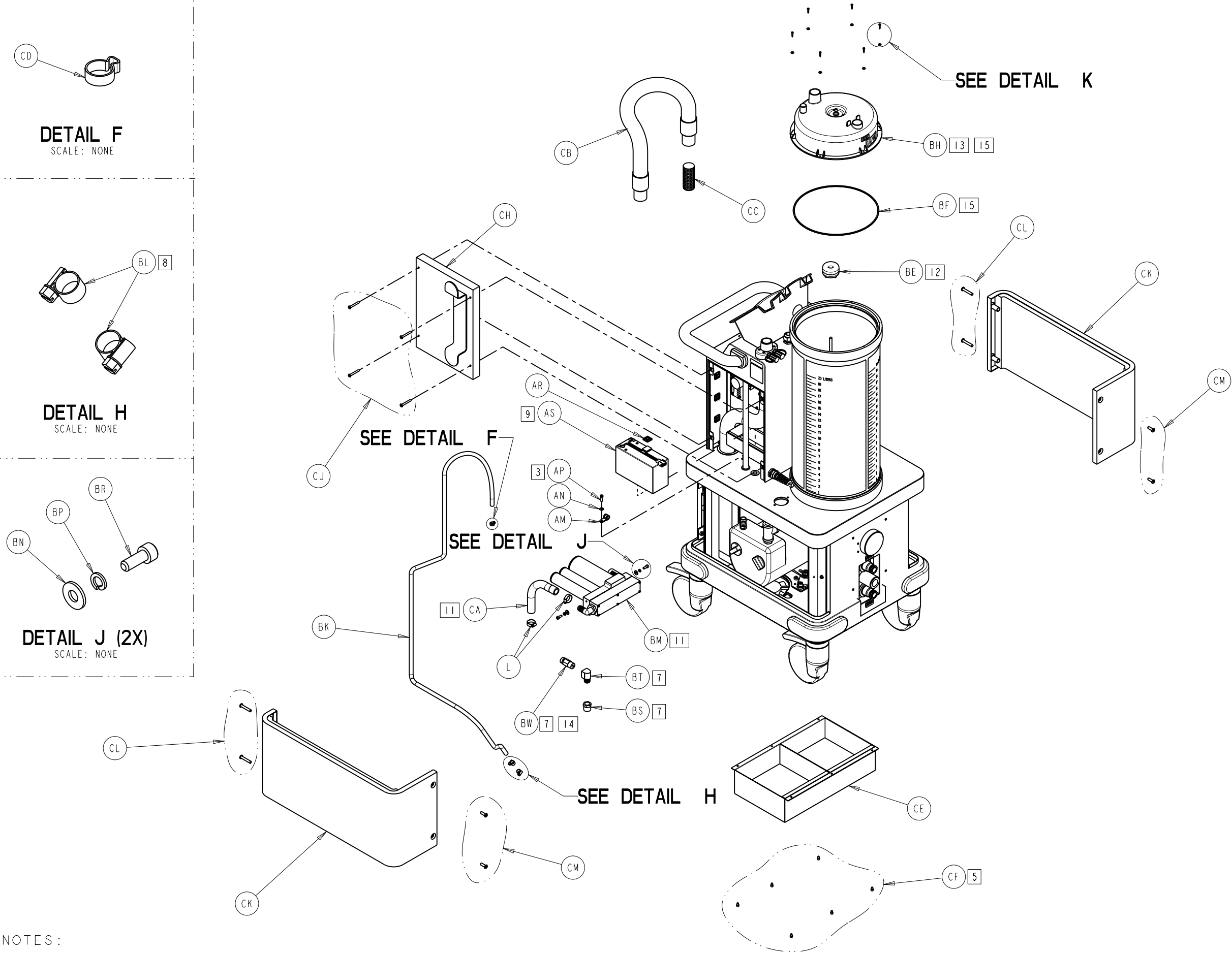
DETAIL F
SCALE: NONE



DETAIL H
SCALE: NONE



DETAIL J (2X)
SCALE: NONE

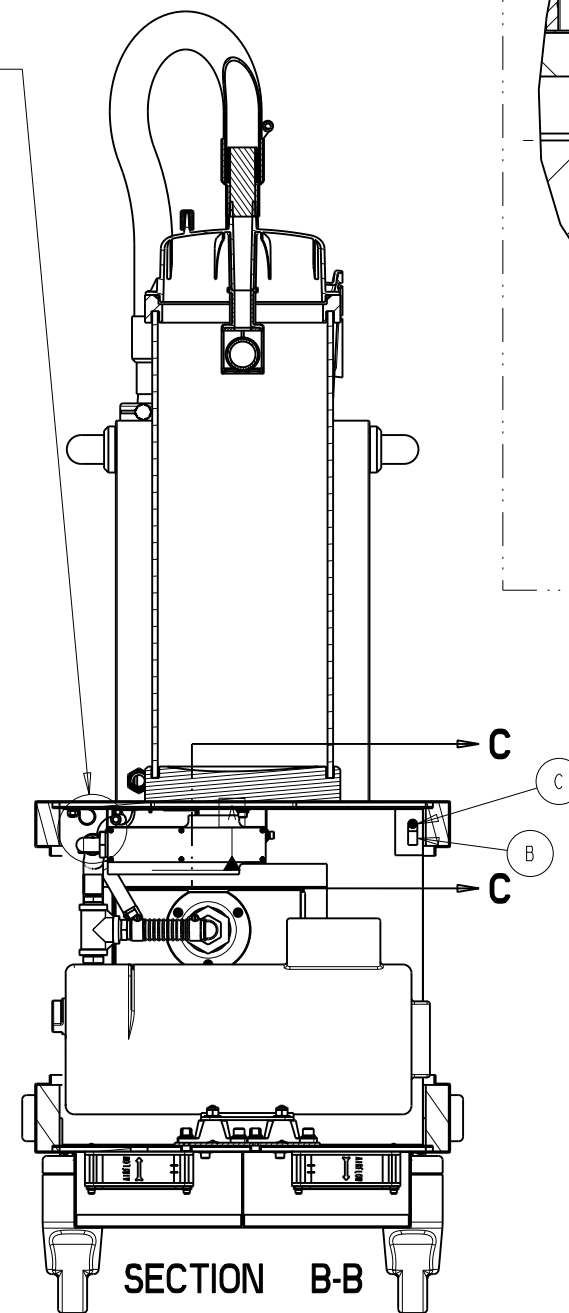
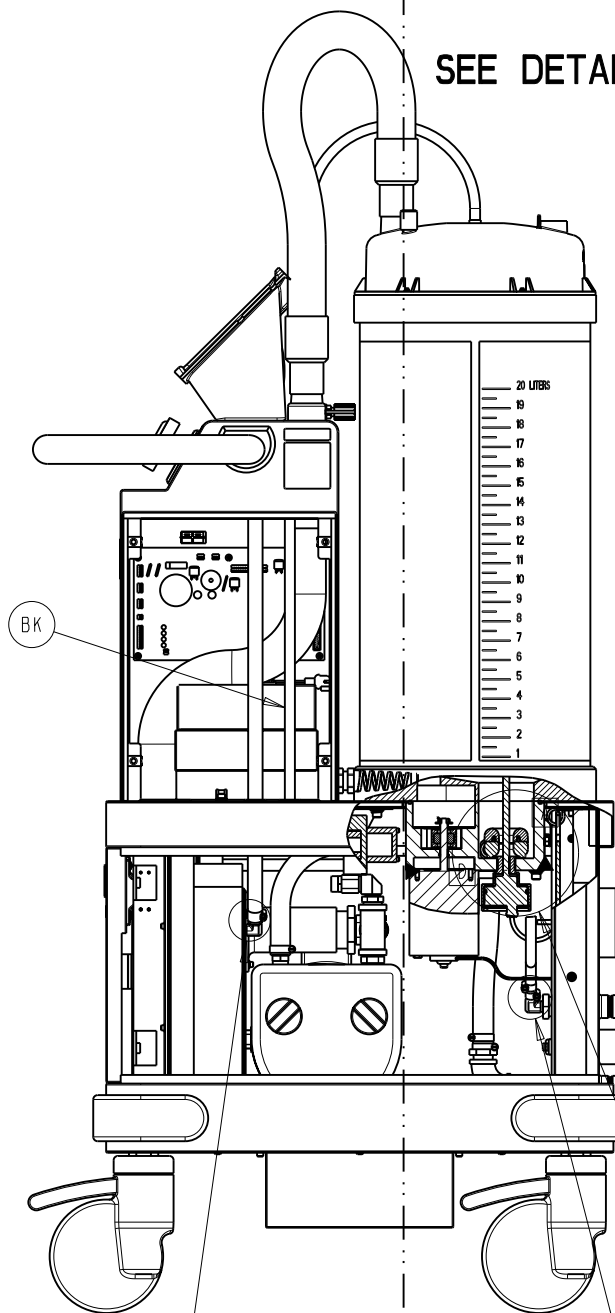
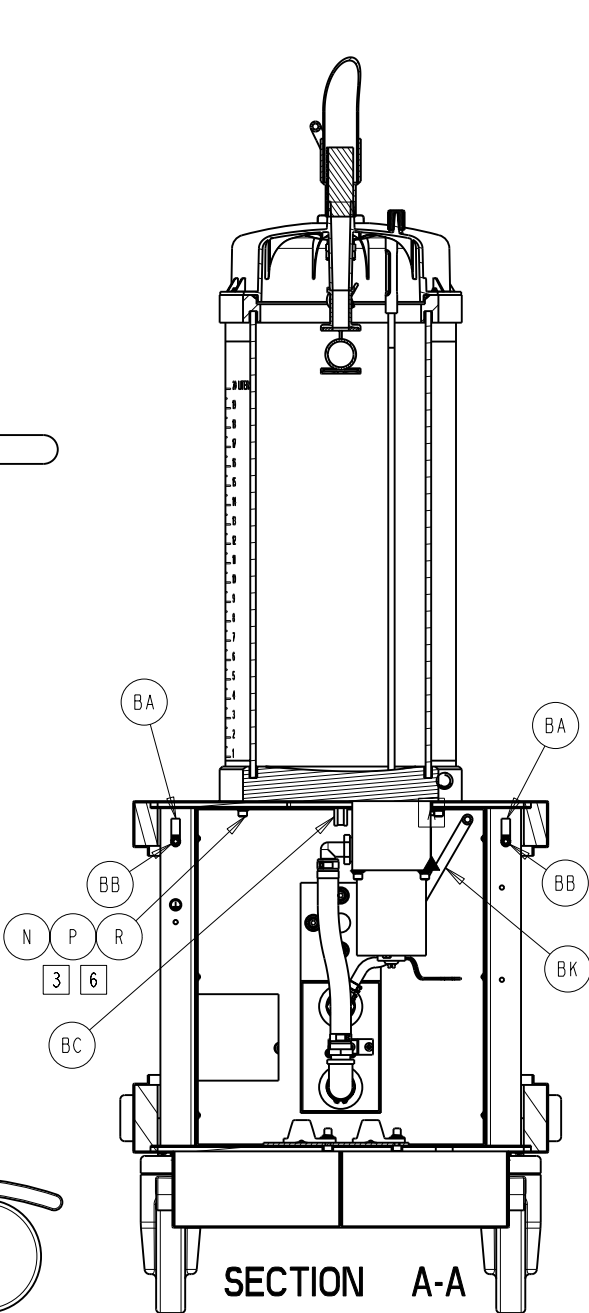
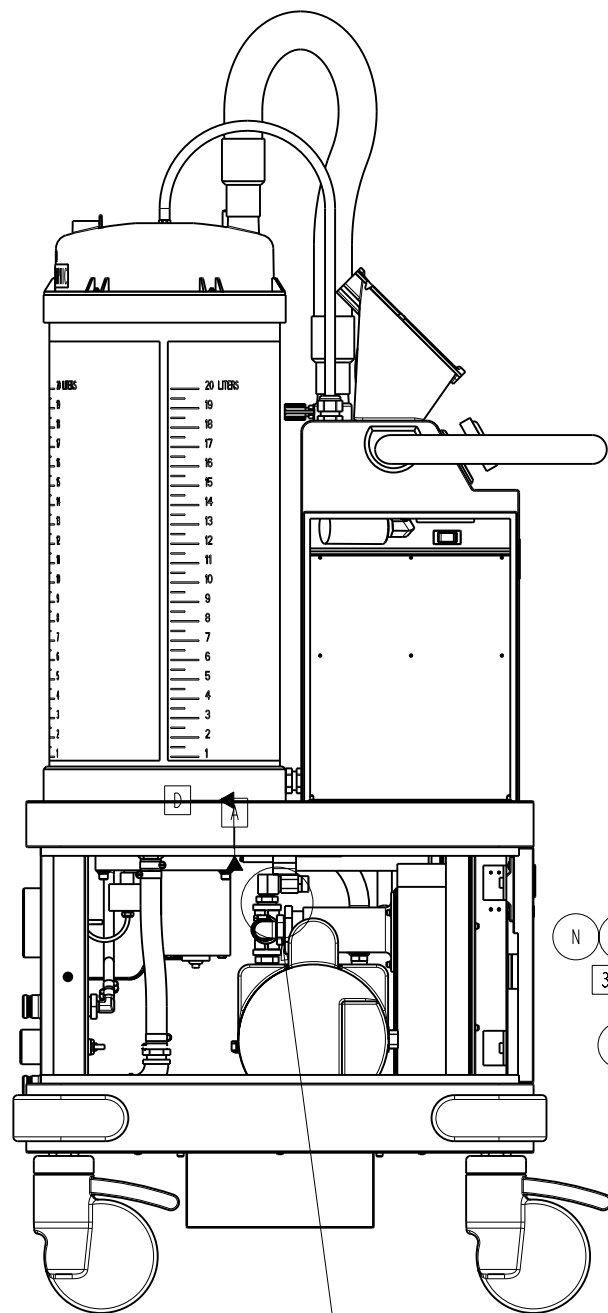
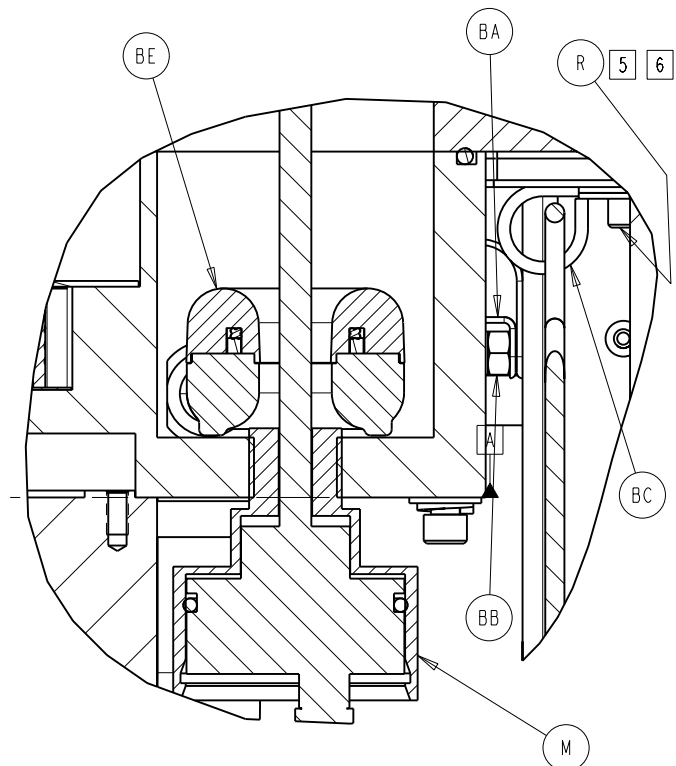
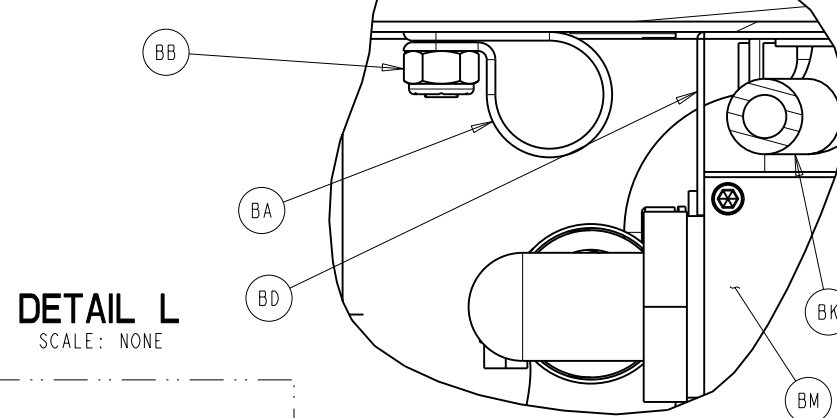
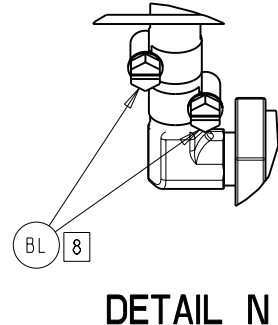
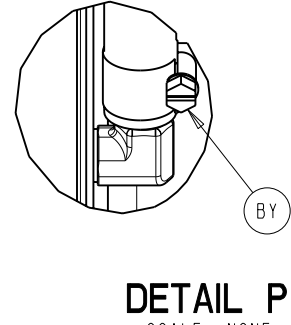
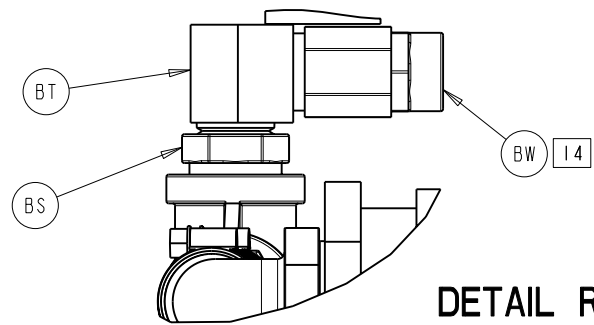


DETAIL K (6X)
SCALE: NONE

NOTES:

FORM NO. 191m009, Rev. NONE	SHEET 3 OF 4
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE BASE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03	PART NO. 0700-902-110	REV. NONE
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NOTES:

SEE DETAIL R

SEE DETAIL P

SEE DETAIL L

SEE DETAIL M

SEE DETAIL N

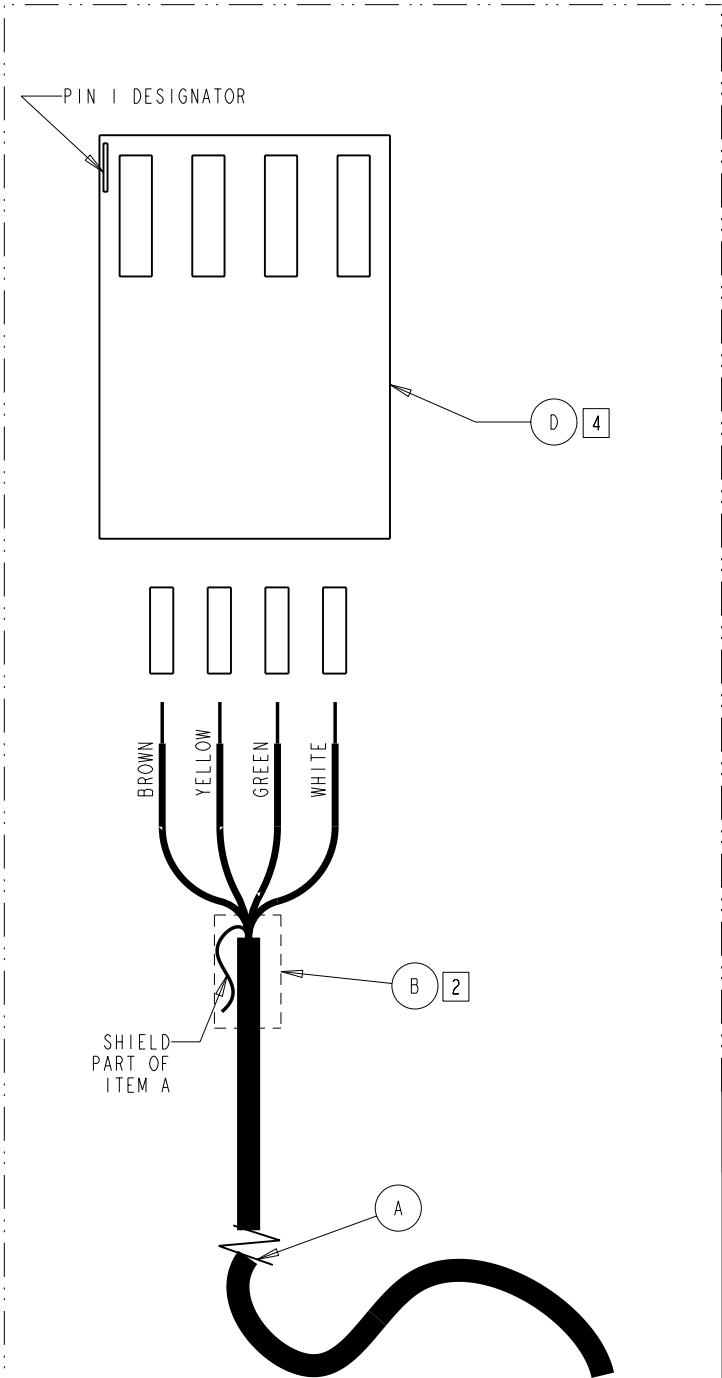
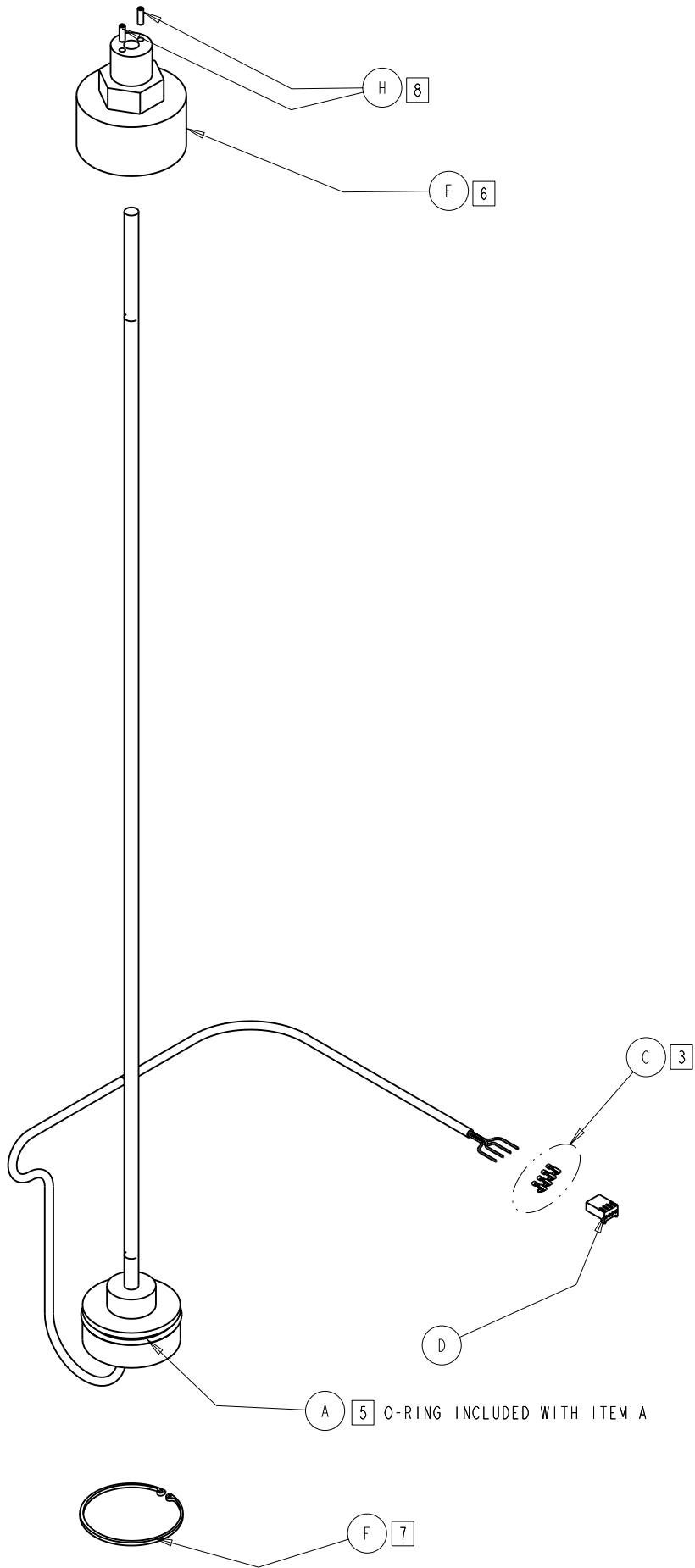
DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

		FORM NO. 19fm009, Rev. NONE		SHEET 4 OF 4	
stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001					
DRAWN BY A. GREENHALGH		DATE 12-16 02	TITLE BASE ROVER ASSEMBLY		
MFG APPROVAL S/A. BEVERAGE		DATE 2-03			
QA APPROVAL S/S. HORVATH		DATE 2-03	PART NO. 0700-902-110		REV. NONE

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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

Item	Part No.	Part Name	Qty.
A	0732-109-001	POSITION TRANSDUCER	1
B	0034-408-000	HEAT SHRINK TUBING	2
C	0034-417-000	CRIMP CONTACT	4
D	0034-414-000	CONNECTOR	1
E	0700-001-142	LEVEL SENSOR TRANSDUCER ADAPTER	1
F	0028-314-000	RETAINING RING, 1-7/8" INTERNAL	1
H	0021-169-000	SET SCREW 4-40 X 3/8	2
J	0072-002-003	LOCTITE (NOT SHOWN)	AR
K	0072-005-031	SILICONE GREASE (NOT SHOWN)	AR



- 8 APPLY LOCTITE 222 ON SET SCREWS AND TIGHTEN FULLY.
- 7 FASTEN IN PLACE BY INSERTING RETAINING RING WITH FLAT SIDE OF RING AGAINST ADAPTER.
- 6 SLIDE LEVEL SENSOR TRANSDUCER ADAPTER DOWN OVER THE TRANSDUCER ROD AND GENTLY PRESS OVER O-RING.
- 5 LUBRICATE O-RING WITH SILICONE GREASE.
- 4 INSERT CRIMP CONTACTS INTO CONNECTOR AS SHOWN.
NOTE: PIN 1 DESIGNATOR ON CONNECTOR.
- 3 ATTACH WIRES ONTO CRIMP CONTACTS USING MOLEX WIRE CRIMPING TOOL.
- 2 PLACE SHRINK TUBE OVER EXPOSED SHIELD AND JACKET.

1. APPLIES TO ROVER MODELS 700-1 AND 700-3

NOTES:

FORM NO. 191m009, Rev. NONE	SHEET 1 OF 1
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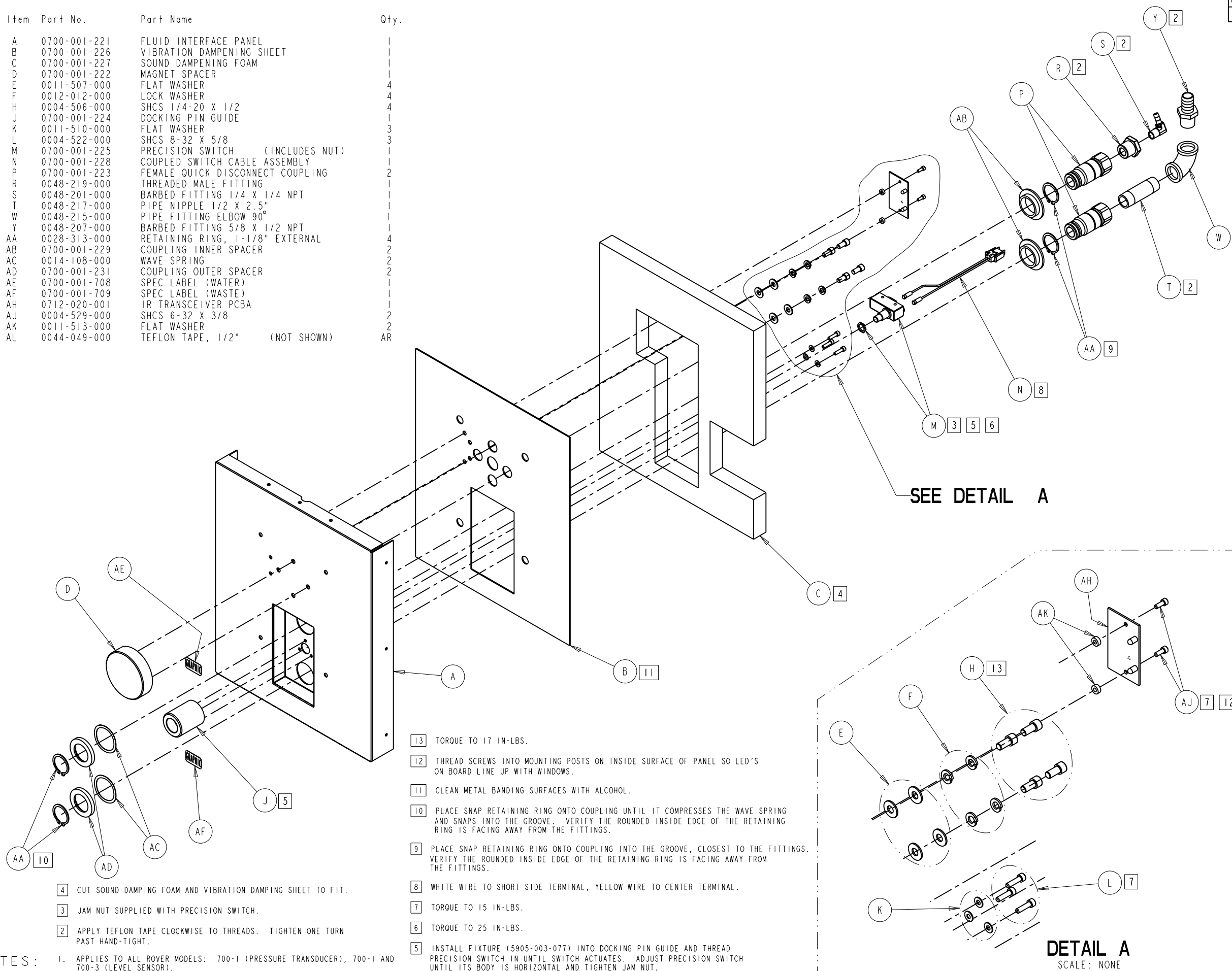
stryker
INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE FLUID LEVEL TRANSDUCER ASSEMBLY
MFG APPROVAL S/ A. BERERAGE	DATE 1-03	
QA APPROVAL S/ S. HORVATH	DATE 1-03	
PART NO. 0700-902-140		REV. NONE

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Item	Part No.	Part Name	Qty.
A	0700-001-221	FLUID INTERFACE PANEL	1
B	0700-001-226	VIBRATION DAMPENING SHEET	1
C	0700-001-227	SOUND DAMPENING FOAM	1
D	0700-001-222	MAGNET SPACER	1
E	0011-507-000	FLAT WASHER	4
F	0012-012-000	LOCK WASHER	4
H	0004-506-000	SHCS 1/4-20 X 1/2	4
J	0700-001-224	DOCKING PIN GUIDE	1
K	0011-510-000	FLAT WASHER	3
L	0004-522-000	SHCS 8-32 X 5/8	3
M	0700-001-225	PRECISION SWITCH (INCLUDES NUT)	1
N	0700-001-228	COUPLED SWITCH CABLE ASSEMBLY	1
P	0700-001-223	FEMALE QUICK DISCONNECT COUPLING	2
R	0048-219-000	THREADED MALE FITTING	1
S	0048-201-000	BARBED FITTING 1/4 X 1/4 NPT	1
T	0048-217-000	PIPE NIPPLE 1/2 X 2.5"	1
W	0048-215-000	PIPE FITTING ELBOW 90°	1
Y	0048-207-000	BARBED FITTING 5/8 X 1/2 NPT	1
AA	0028-313-000	RETAINING RING, 1-1/8" EXTERNAL	4
AB	0700-001-229	COUPLING INNER SPACER	2
AC	0014-108-000	WAVE SPRING	2
AD	0700-001-231	COUPLING OUTER SPACER	2
AE	0700-001-708	SPEC LABEL (WATER)	1
AF	0700-001-709	SPEC LABEL (WASTE)	1
AH	0712-020-001	IR TRANSCEIVER PCBA	1
AJ	0004-529-000	SHCS 6-32 X 3/8	2
AK	0011-513-000	FLAT WASHER	2
AL	0044-049-000	TEFLON TAPE, 1/2" (NOT SHOWN)	AR

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



NOTES:

1. APPLIES TO ALL ROVER MODELS: 700-1 (PRESSURE TRANSDUCER), 700-1 AND 700-3 (LEVEL SENSOR).

- 13 TORQUE TO 17 IN-LBS.
- 12 THREAD SCREWS INTO MOUNTING POSTS ON INSIDE SURFACE OF PANEL SO LED'S ON BOARD LINE UP WITH WINDOWS.
- 11 CLEAN METAL BANDING SURFACES WITH ALCOHOL.
- 10 PLACE SNAP RETAINING RING ONTO COUPLING UNTIL IT COMPRESSES THE WAVE SPRING AND SNAPS INTO THE GROOVE. VERIFY THE ROUNDED INSIDE EDGE OF THE RETAINING RING IS FACING AWAY FROM THE FITTINGS.
- 9 PLACE SNAP RETAINING RING ONTO COUPLING INTO THE GROOVE, CLOSEST TO THE FITTINGS. VERIFY THE ROUNDED INSIDE EDGE OF THE RETAINING RING IS FACING AWAY FROM THE FITTINGS.
- 8 WHITE WIRE TO SHORT SIDE TERMINAL, YELLOW WIRE TO CENTER TERMINAL.
- 7 TORQUE TO 15 IN-LBS.
- 6 TORQUE TO 25 IN-LBS.
- 5 INSTALL FIXTURE (5905-003-077) INTO DOCKING PIN GUIDE AND THREAD PRECISION SWITCH IN UNTIL SWITCH ACTUATES. ADJUST PRECISION SWITCH UNTIL ITS BODY IS HORIZONTAL AND TIGHTEN JAM NUT.

DETAIL A
SCALE: NONE

FORM NO. 191m009, Rev. NONE SHEET 1 OF 2

stryker
INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

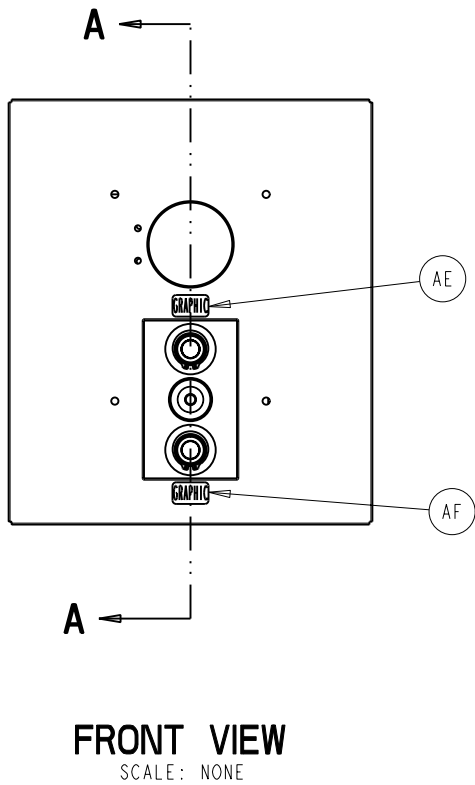
DRAWN BY
A. GREENHALGH
MFG APPROVAL
S/ A. BEVERAGE
QA APPROVAL
S/ S. HORVATH

DATE
12-16-02
DATE
1-03
DATE
1-03

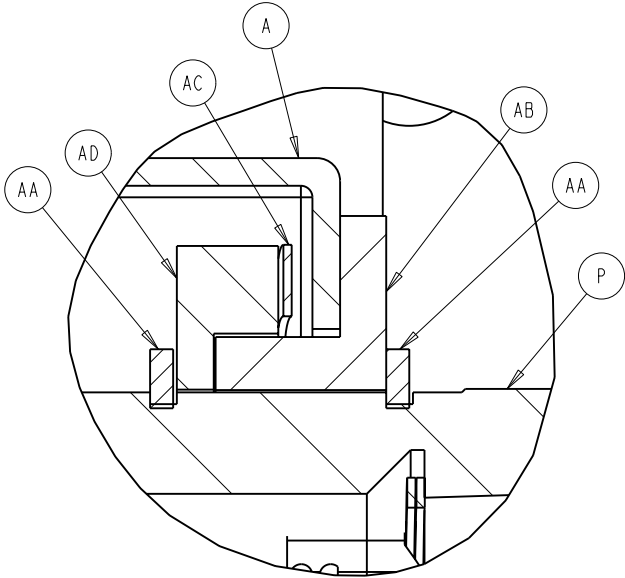
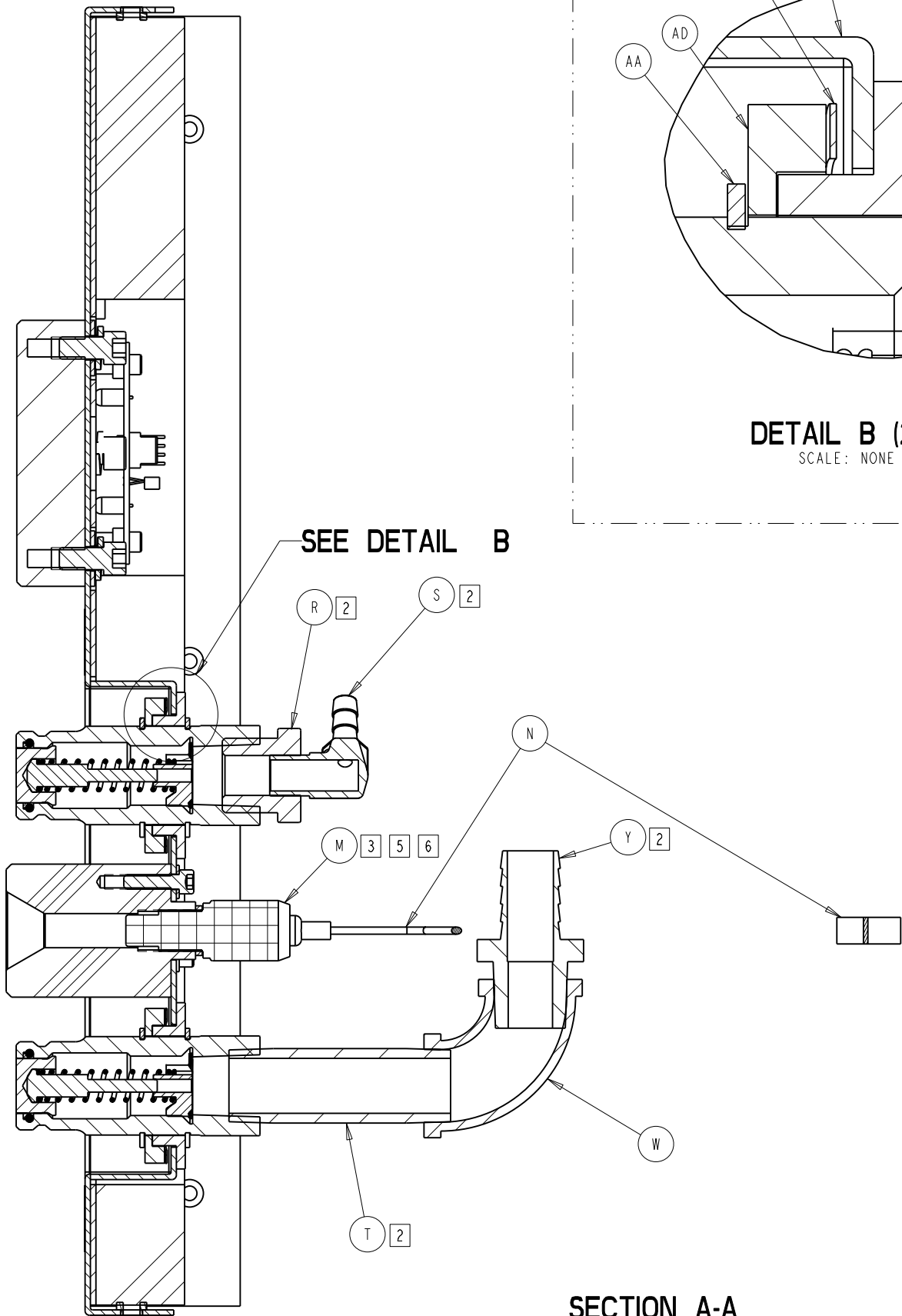
TITLE
FLUID INTERFACE PANEL ASSEMBLY
PART NO.
0700-902-220
REV.
NONE

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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



NOTES:

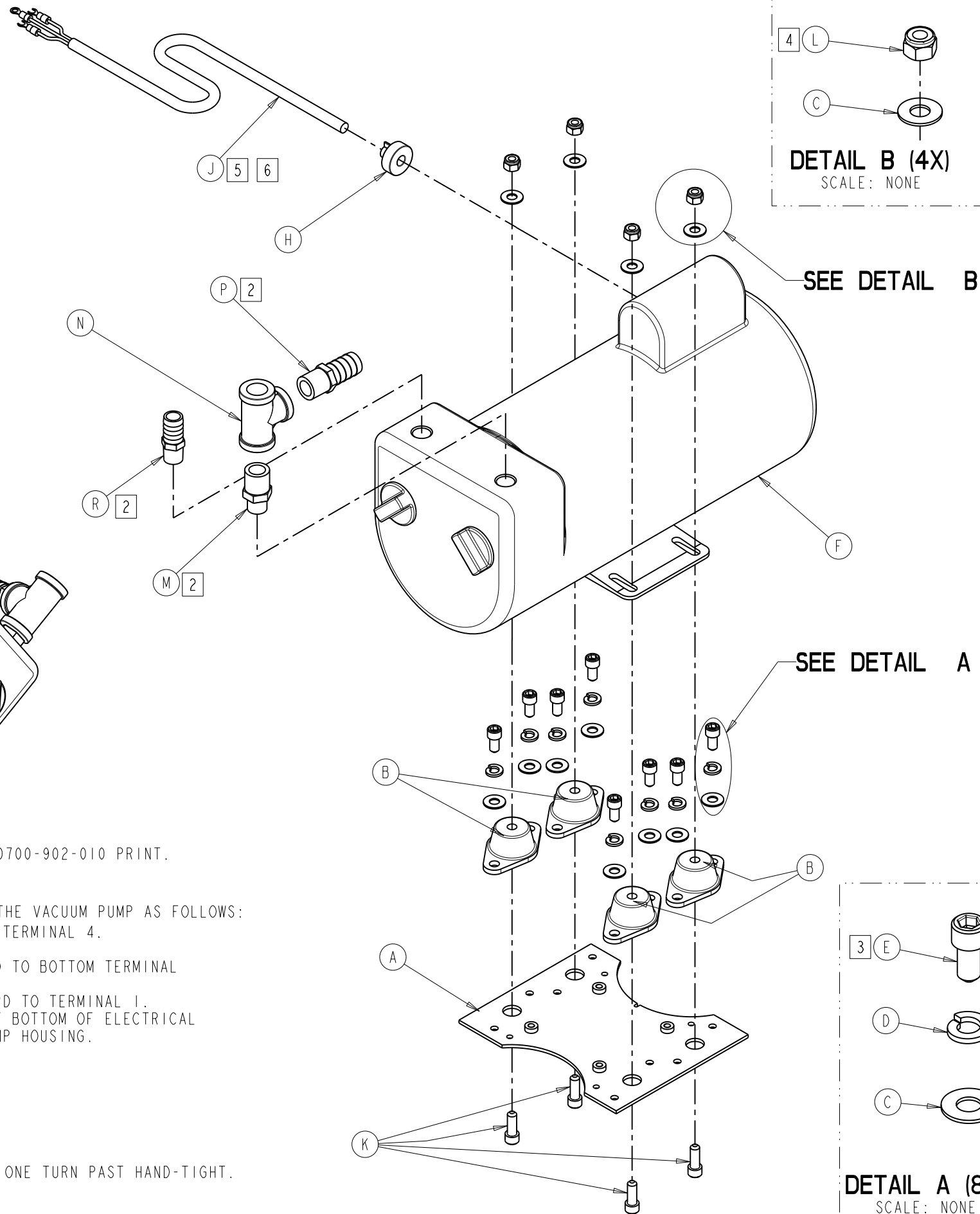
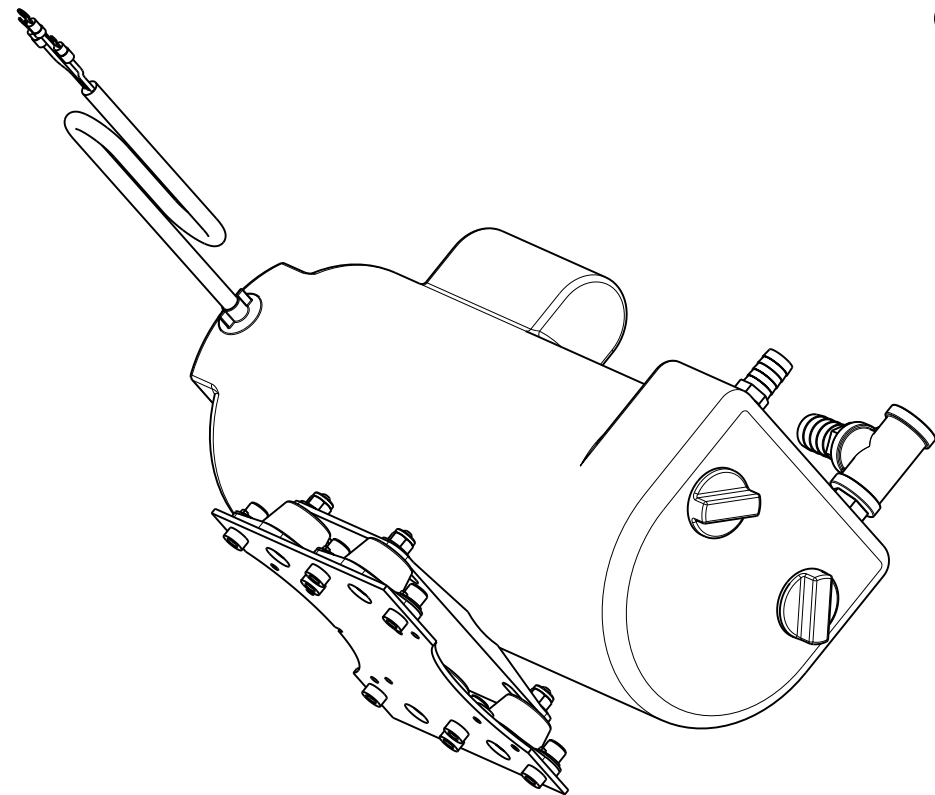


FORM NO. 19im009, Rev. NONE	SHEET 2 OF 2
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE FLUID INTERFACE PANEL ASSEMBLY	
MFG APPROVAL	DATE		
S/ A. BEVERAGE	1-03		
QA APPROVAL	DATE	PART NO. 0700-902-220	REV. NONE
S/ S. HORVATH	1-03		

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Item	Part No.	Part Name	Qty.
A	0700-001-244	MOUNTING PLATE	1
B	0700-001-243	VIBRATION CONTROL MOUNT	4
C	0011-508-000	FLAT WASHER	12
D	0012-011-000	SPLIT LOCK WASHER 5/16	8
E	0004-527-000	SHCS 5/16-18 X 5/8	8
F	0700-001-242	VACUUM PUMP	1
H	0058-332-000	CABLE FITTING	1
J	0700-001-241	PUMP TO TRANSFORMER CABLE ASSY	1
K	0004-531-000	SHCS 5/16-18 X 7/8	4
L	0016-321-000	LOCKNUT, NYLON INSERT 5/16-18	4
M	0048-196-000	HEX REDUCING NIPPLE	1
N	0048-216-000	PIPE TEE	1
P	0048-204-000	BARBED FITTING	1
R	0048-209-000	BARBED FITTING 3/8 NPT	1
S	0044-049-000	TEFLON TAPE, 1/2" (NOT SHOWN)	AR



- 6 WHEN PLACING VACUUM PUMP IN 700-1 MODEL REFER TO 0700-902-010 PRINT. FOR 700-3 MODEL REFER TO 0700-903-010 PRINT.
- 5 CONNECT THE CABLE ASSEMBLY (P/N 0700-001-241) TO THE VACUUM PUMP AS FOLLOWS:
- A. CONNECT WIRE LABELED T2 TO TOP TERMINAL OF TERMINAL 4.
 - B. CONNECT WIRE LABELED T3 TO TERMINAL 2.
 - C. CONNECT BLUE WIRE OF VACUUM PUMP POWER CORD TO BOTTOM TERMINAL OF TERMINAL 4.
 - D. CONNECT BROWN WIRE OF VACUUM PUMP POWER CORD TO TERMINAL 1.
 - E. CONNECT GREEN/YELLOW WIRE TO GREEN SCREW AT BOTTOM OF ELECTRICAL HOUSING. THIS SCREWS DIRECTLY INTO THE PUMP HOUSING.
 - F. TORQUE GROUND SCREW TO 17 IN-LBS.
- 4 TORQUE TO 80 IN-LBS.
- 3 TORQUE TO 50 IN-LBS.
- 2 APPLIED TEFLON TAPE CLOCKWISE TO THREADS, TIGHTEN ONE TURN PAST HAND-TIGHT.

NOTES: 1. APPLIES TO ALL ROVER MODELS.

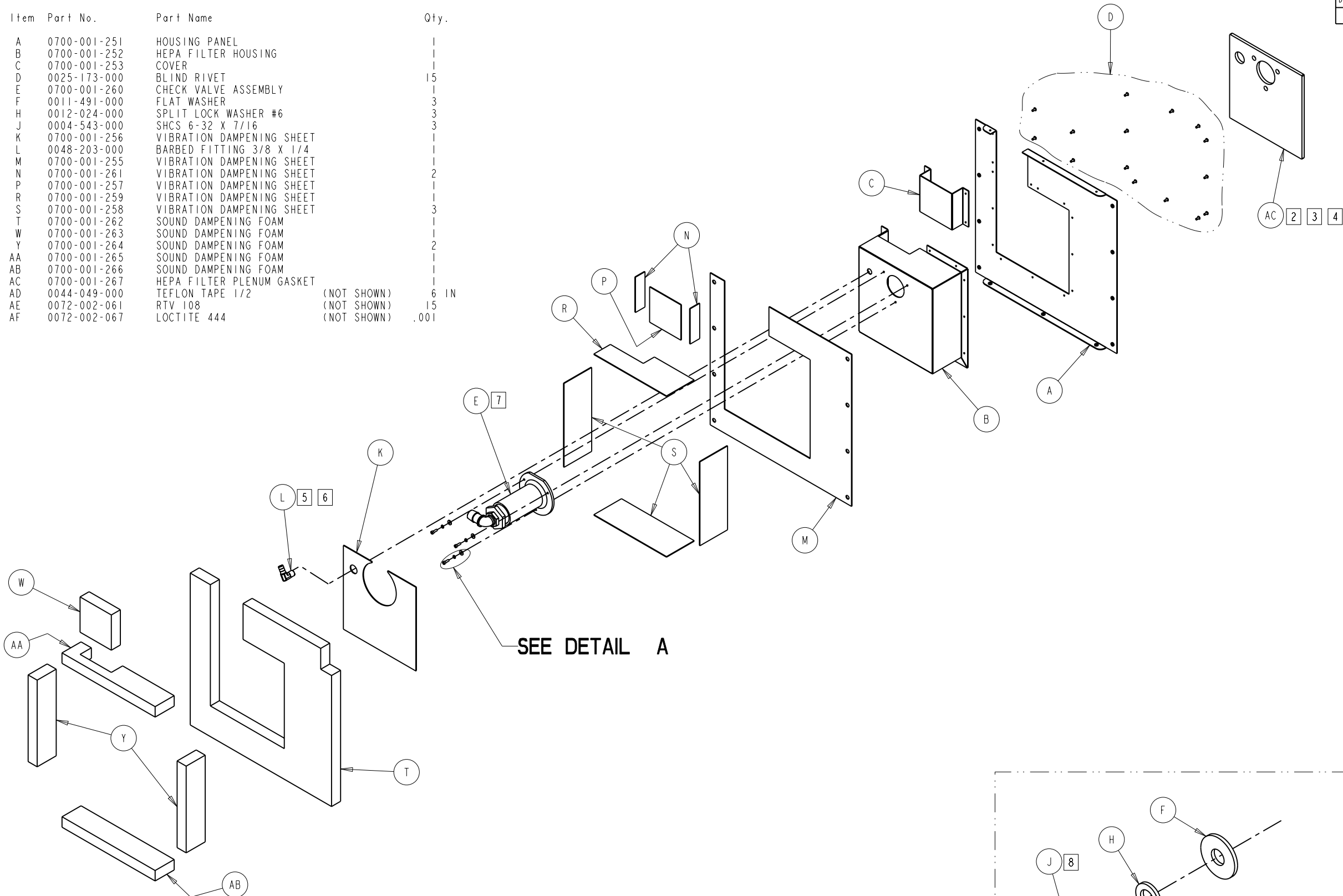
DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

FORM NO. 191m009, Rev. NONE		SHEET 1 OF 1	
stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE VACUUM PUMP ASSEMBLY	
MFG APPROVAL S/ A. BEVERAGE	DATE 1-03		
QA APPROVAL S/ S. HORVATH	DATE 1-03	PART NO. 0700-902-240	REV. NONE

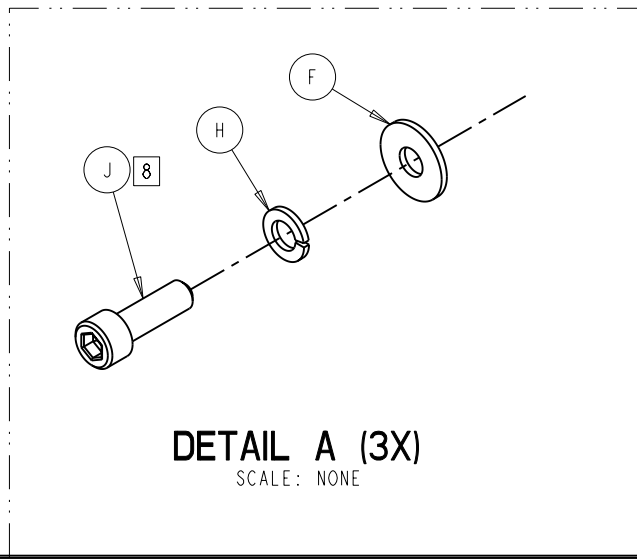
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Item	Part No.	Part Name	Qty.
A	0700-001-251	HOUSING PANEL	1
B	0700-001-252	HEPA FILTER HOUSING	1
C	0700-001-253	COVER	1
D	0025-173-000	BLIND RIVET	15
E	0700-001-260	CHECK VALVE ASSEMBLY	1
F	0011-491-000	FLAT WASHER	3
H	0012-024-000	SPLIT LOCK WASHER #6	3
J	0004-543-000	SHCS 6-32 X 7/16	3
K	0700-001-256	VIBRATION DAMPENING SHEET	1
L	0048-203-000	BARBED FITTING 3/8 X 1/4	1
M	0700-001-255	VIBRATION DAMPENING SHEET	1
N	0700-001-261	VIBRATION DAMPENING SHEET	2
P	0700-001-257	VIBRATION DAMPENING SHEET	1
R	0700-001-259	VIBRATION DAMPENING SHEET	1
S	0700-001-258	VIBRATION DAMPENING SHEET	3
T	0700-001-262	SOUND DAMPENING FOAM	1
W	0700-001-263	SOUND DAMPENING FOAM	1
Y	0700-001-264	SOUND DAMPENING FOAM	2
AA	0700-001-265	SOUND DAMPENING FOAM	1
AB	0700-001-266	SOUND DAMPENING FOAM	1
AC	0700-001-267	HEPA FILTER PLENUM GASKET	1
AD	0044-049-000	TEFLON TAPE 1/2	(NOT SHOWN) 6 IN
AE	0072-002-061	RTV 108	(NOT SHOWN) 15
AF	0072-002-067	LOCTITE 444	(NOT SHOWN) .001

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



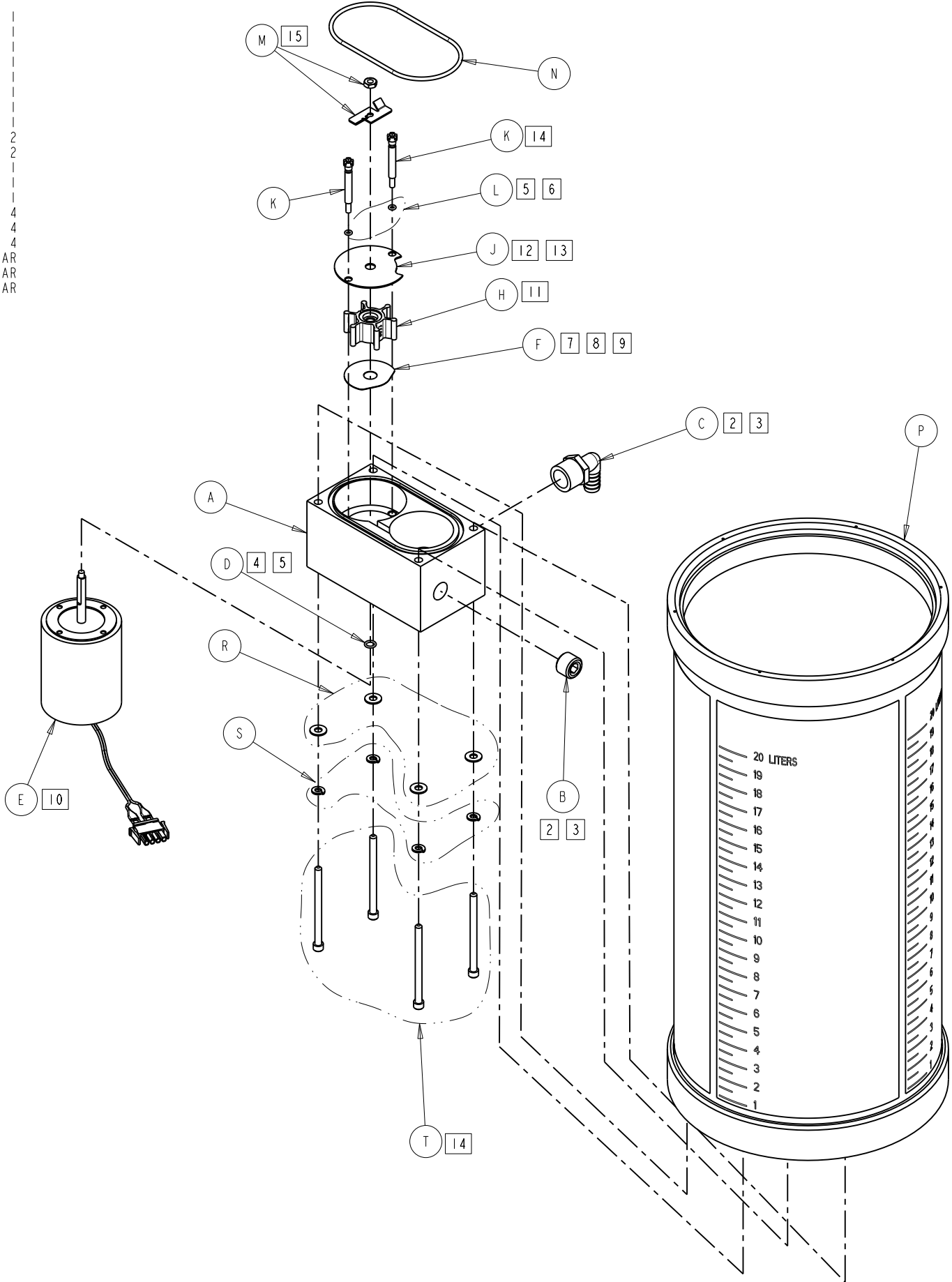
- NOTES:
1. APPLIES TO ROVER MODELS 700-1 AND 700-3.
 2. TOPSIDE OF GASKET IS SHOWN.
 3. APPLY RTV 108 OVER ENTIRE SURFACE OF TOPSIDE OF HEPA FILTER PLENUM GASKET.
 4. PLACE GASKET INTO HEPA FILTER HOUSING 0700-001-252(B). NOTE: CURE TIME IS 24 HOURS.
 5. APPLY TEFLON TAPE IN A CLOCKWISE DIRECTION TO THREADS ON BARBED FITTING.
 6. FITTING SHOULD BE ROTATED ABOUT 30° COUNTERCLOCKWISE FROM VERTICAL WHEN ASSEMBLED.
 7. APPLY BEAD OF RTV 108 TO FLANGE OF CHECK VALVE ASSEMBLY AND ATTACH USING SCREWS. NOTE: CURE TIME IS 24 HOURS.
 8. TORQUE TO 15 IN-LBS.



FORM NO. 191m009, Rev. NONE		SHEET 1 OF 1	
stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE HEPA FILTER PLENUM ASSEMBLY	
MFG APPROVAL S/ A. BEVERAGE	DATE 1-03		
QA APPROVAL S/ S. HORVATH	DATE 1-03	PART NO. 0700-902-250	REV. NONE
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Item	Part No.	Part Name	Qty.
A	0700-001-312	MACERATOR PUMP MANIFOLD	1
B	0048-210-000	HEX SOCKET PLUG	1
C	0048-212-000	NYLON BARBED FITTING	1
D	0045-266-000	O-RING (5/16 ID X 1/16 THICK)	1
E	0700-001-330	MACERATOR MOTOR ASSEMBLY	1
F	0700-001-314	SMALL WEARPLATE	1
H	0700-001-315	MACERATOR IMPELLER	1
J	0700-001-316	MACERATOR PUMP PLATE	1
K	0700-001-313	SEALING SCREW	2
L	0045-269-000	O-RING (5/32 ID X 1/16 THICK)	2
M	0700-001-311	CHOPPER PLATE AND HEX NUT KIT	1
N	0045-268-000	O-RING (4-1/2 ID X 1/8 THICK)	1
P	0700-001-320	CANISTER ASSEMBLY	1
R	0011-507-000	FLAT WASHER (1/4)	4
S	0012-012-000	LOCK WASHER (1/4)	4
T	0004-544-000	SHCS 1/4-20 X 3-1/2	4
W	0044-049-000	TEFLON TAPE, 1/2"	AR
Y	0072-005-031	SILICONE GREASE	AR
AA	0072-002-002	LOCTITE 271	AR

(NOT SHOWN)
(NOT SHOWN)
(NOT SHOWN)



- 15 APPLY LOCTITE 271 TO THE NUT AND TIGHTEN UNTIL SNUG.
NOTE: BE CAREFUL THAT LOCTITE DOES NOT DRIP DOWN BELOW THREADS ON NUT.
- 14 TORQUE TO 30 IN-LBS.
- 13 PLACE PUMP PLATE DOWN ONTO MANIFOLD OVER THE MOTOR SHAFT. THE CUT-OUT ON THE PLATE SHOULD LINE UP WITH THE CUT-OUT IN THE MANIFOLD.
- 12 APPLY SILICONE GREASE TO UNDERSIDE OF MACERATOR PUMP PLATE.
- 11 INSERT MACERATOR IMPELLER INTO PUMP CAVITY OVER MOTOR SHAFT SO THE FLAT OF THE IMPELLER HOLE IS AGAINST THE FLAT OF THE MOTOR SHAFT. THE WRITING ON THE IMPELLER SHOULD BE POINTING UP.
- 10 INSERT THE SHAFT OF THE MACERATOR MOTOR FROM THE UNDERSIDE THROUGH THE WEARPLATE INTO THE CAVITY.
- 9 APPLY SILICONE GREASE (0072-005-031) TO THE INNER WALLS OF THE PUMP CAVITY.
- 8 PLACE WEARPLATE, GREASE SIDE UP, INTO THE BOTTOM OF THE PUMP CAVITY IN THE MANIFOLD.
- 7 APPLY SILICONE GREASE (0072-005-031) TO THE SMOOTH SIDE OF WEARPLATE.
- 6 SLIDE O-RING'S INTO THE GROOVE NEAR THE HEAD OF THE SCREW'S (K).
- 5 APPLY SILICONE GREASE (0072-005-031) TO THE O-RING.
- 4 INSTALL O-RING INTO INSIDE GROOVE OF THE MACERATOR PUMP MANIFOLD.
- 3 THREAD INTO MANIFOLD UNTIL TIGHT.
- 2 WRAP THREADS CLOCKWISE WITH TEFLON TAPE.

1. APPLIES TO ROVER MODELS 700-1 (LEVEL SENSOR) AND 700-3.

NOTES:

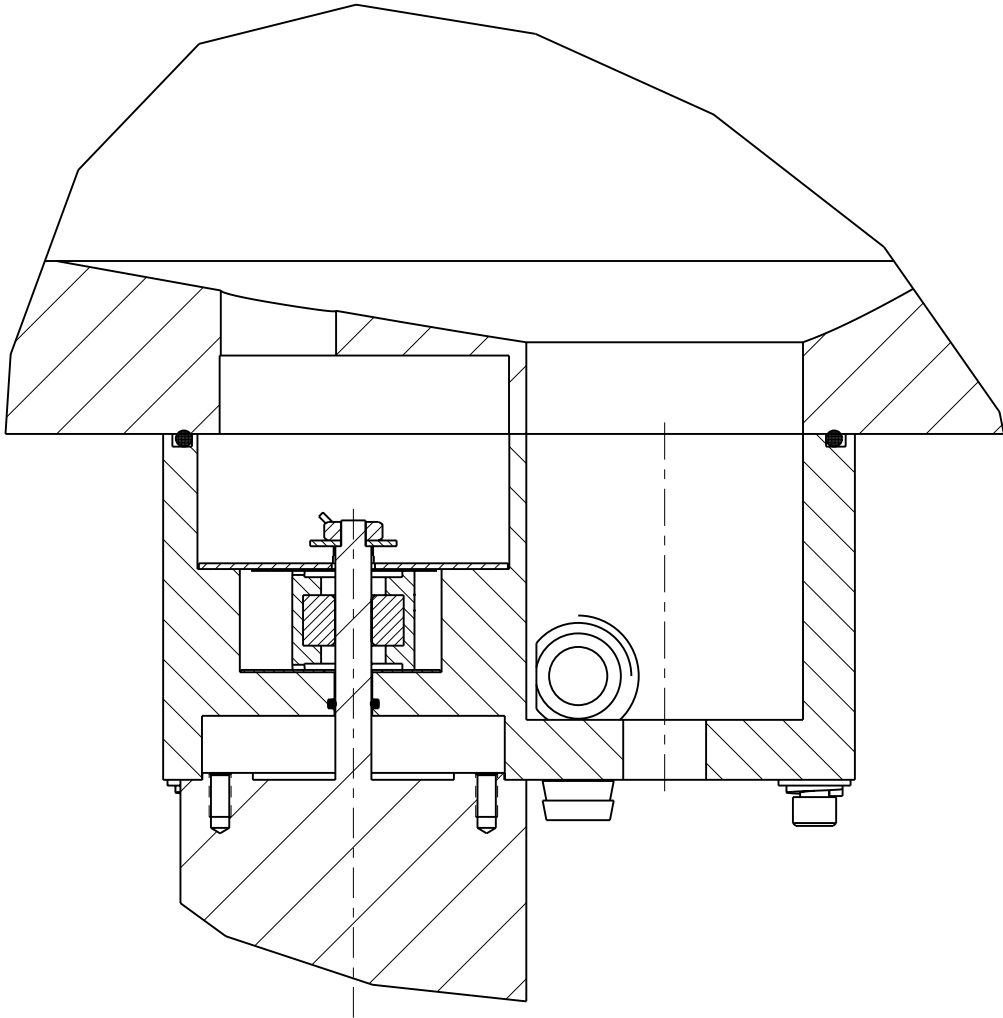
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FORM NO. 191m009, Rev. NONE	SHEET 1 OF 2
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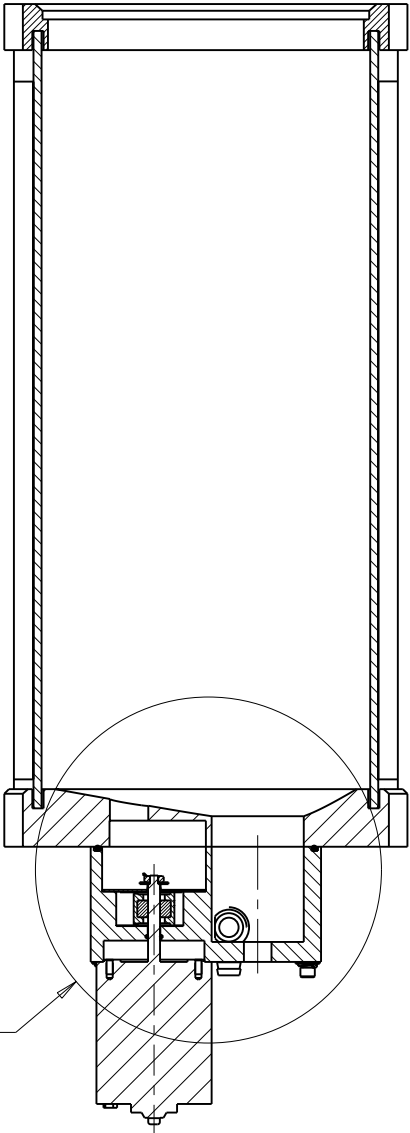
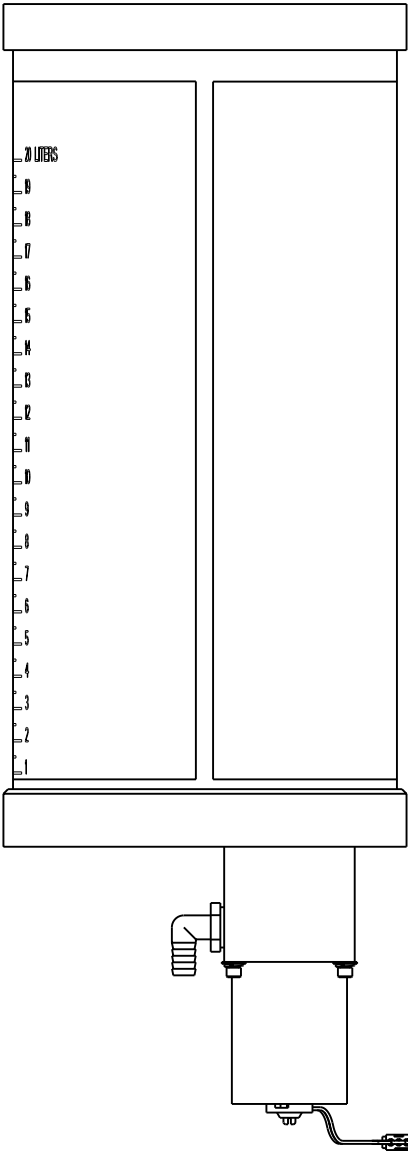
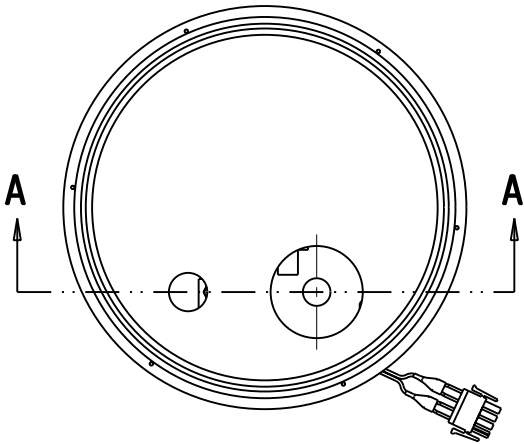
stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE MACERATOR PUMP / CANISTER ASSEMBLY	
MFG APPROVAL	DATE		
S/ A. BEVERAGE	1-03		
QA APPROVAL	DATE	PART NO. 0700-902-310	REV. NONE
S/ S. HORVATH	1-03		

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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



DETAIL A
SCALE: NONE



SEE DETAIL

SECTION A-A

NOTES:

FORM NO. 191m009, Rev. NONE	SHEET 2 OF 2
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE MACERATOR PUMP / CANISTER ASSEMBLY	
MFG APPROVAL	DATE		
S/ A. BEVERAGE	1-03		
QA APPROVAL	DATE	PART NO. 0700-902-310	REV. NONE
S/ S. HORVATH	1-03		
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Item	Part No.	Part Name	Qty.	Item	Part No.	Part Name	Qty.	Item	Part No.	Part Name	Qty.
A	0700-001-411	ROVER TOWER HOUSING	1	Y	0700-001-415	FLEX STYLE STRAIN RELIEF	1	AT	0004-535-000	SHCS 10-32 X 3/8	4
B	0700-001-413	ROVER HANDLE	1	AA	0036-046-000	LABEL, PROTECTIVE EARTH (GRD)	1	AW	0037-239-000	NYLON LOCKING HOLE PLUG	1
C	0012-012-000	LOCK WASHER (1/4)	6	AB	0700-001-417	BATTERY TRAY FOAM	2	AY	0712-019-001	ROVER POWER CONTROLLER PCBA	1
D	0004-506-000	SHCS 1/4-20 X 1/2	6	AC	0700-001-421	TOWER SHORT GASKET	1	BA	0012-024-000	SPLIT LOCK WASHER #6	6
E	0700-001-450	SUCTION COUPLING ASSEMBLY	1	AD	0700-001-422	TOWER GASKET	2	BB	0050-038-000	PAN HEAD SCREW 6-32 X 1/4	6
F	0004-532-000	SHCS 6-32 X 3/4	4	AE	0055-033-000	U-NUT	4	BC	0060-012-000	BRAIDED TUBING (NOT SHOWN)	29 IN
H	0048-202-000	BARBED FITTING 1/4 X 1/8	1	AF	0044-048-000	VHB TAPE	AR	BD	0060-011-000	BRAIDED TUBING 1/4 (NOT SHOWN)	12 IN
J	0700-001-418	DOVE STRAIN RELIEF	1	AH	0700-001-718	SPEC LABEL (NEPTUNE PLACARD)	1	BE	0058-327-000	HOSE CLAMP (NOT SHOWN)	2
K	0700-001-440	NEEDLE VALVE ASSEMBLY	1	AJ	0700-001-703	SPEC LABEL (WALL VAC SUCT PORT)	1	BF	0700-001-424	BATTERY SWITCH CABLE ASSEMBLY (NOT SHOWN)	1
L	0011-510-000	FLAT WASHER (#8)	4	AK	0700-001-723	LABEL (WALL VAC CAUTION)	1	BH	0058-323-000	HOSE CLAMP (NOT SHOWN)	1
M	0016-014-000	LOCKNUT, NYLON INSERT 8-32	4	AL	0700-001-706	SPEC LABEL (VAC PRES CONTROL)	1	BJ	0044-049-000	TEFLON TAPE, 1/2" (NOT SHOWN)	AR
N	0015-005-000	HEX NUT 1/4-20	1	AM	0700-001-715	SPEC LABEL (BATT SWITCH ON/OFF)	1	BK	0072-002-001	LOCTITE 242 (NOT SHOWN)	AR
P	0024-072-000	PLASTIC KNOB W/ BRASS INSERT	1	AN	0700-001-726	LABEL (INCREASE ARROW-CW)	1	BL	0072-002-090	LOCTITE 411 (NOT SHOWN)	AR
R	0700-001-416	VACUUM GAUGE	1	AP	0700-001-423	ROCKER SWITCH	1				
S	0048-200-000	BARBED FITTING 1/4 X 1/4	1	AR	0700-001-115	USER INTERFACE PANEL TOWER	1				
T	0700-001-443	VALVE INTAKE MUFFLER	1	AS	0011-511-000	FLAT WASHER (#10)	4				
W	0030-060-000	RUBBER EDGE TRIM	7.25"								

PARTIAL SECTION B-B
SCALE: NONE

PARTIAL SECTION C-C
SCALE: NONE

PARTIAL SECTION A-A

VIEW B-B
SCALE: NONE

VIEW A-A
SCALE: NONE

6 TORQUE LOCKNUT TO 25 IN-LBS.

5 TORQUE SCREWS TO 10 IN-LBS.

4 TORQUE NUT TO 35 IN-LBS.

3 APPLY TEFLON TAPE IN A CLOCKWISE DIRECTION.

2 APPLY LOCTITE 242.

9 CONNECT TERMINALS OF BATTERY SWITCH CABLE ASSEMBLY TO ROCKER SWITCH. CONTACTS OF ROCKER SWITCH SHOULD BE ON TOP.

8 APPLY LOCTITE 411 AT 3 POINTS INSIDE THE GROOVE OF THE RUBBER EDGE TRIM.

7 HOLD PLASTIC KNOB STEADY WHILE TIGHTENING HEX NUT. THREAD PLASTIC KNOB ONTO THE SHAFT UNTIL IT STOPS. THEN TIGHTEN THE HEX NUT AGAINST THE KNOB.

NOTES: 1. APPLIES TO ROVER MODELS 700-1 AND 700-3.

FORM NO. 191m009, Rev. NONE

SHEET 1 OF 2

stryker
INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

DRAWN BY
A. GREENHALGH

DATE
12-16-02

MFG APPROVAL

DATE

S/ A. BEVERAGE

1-03

QA APPROVAL

DATE

S/ S. HORVATH

1-03

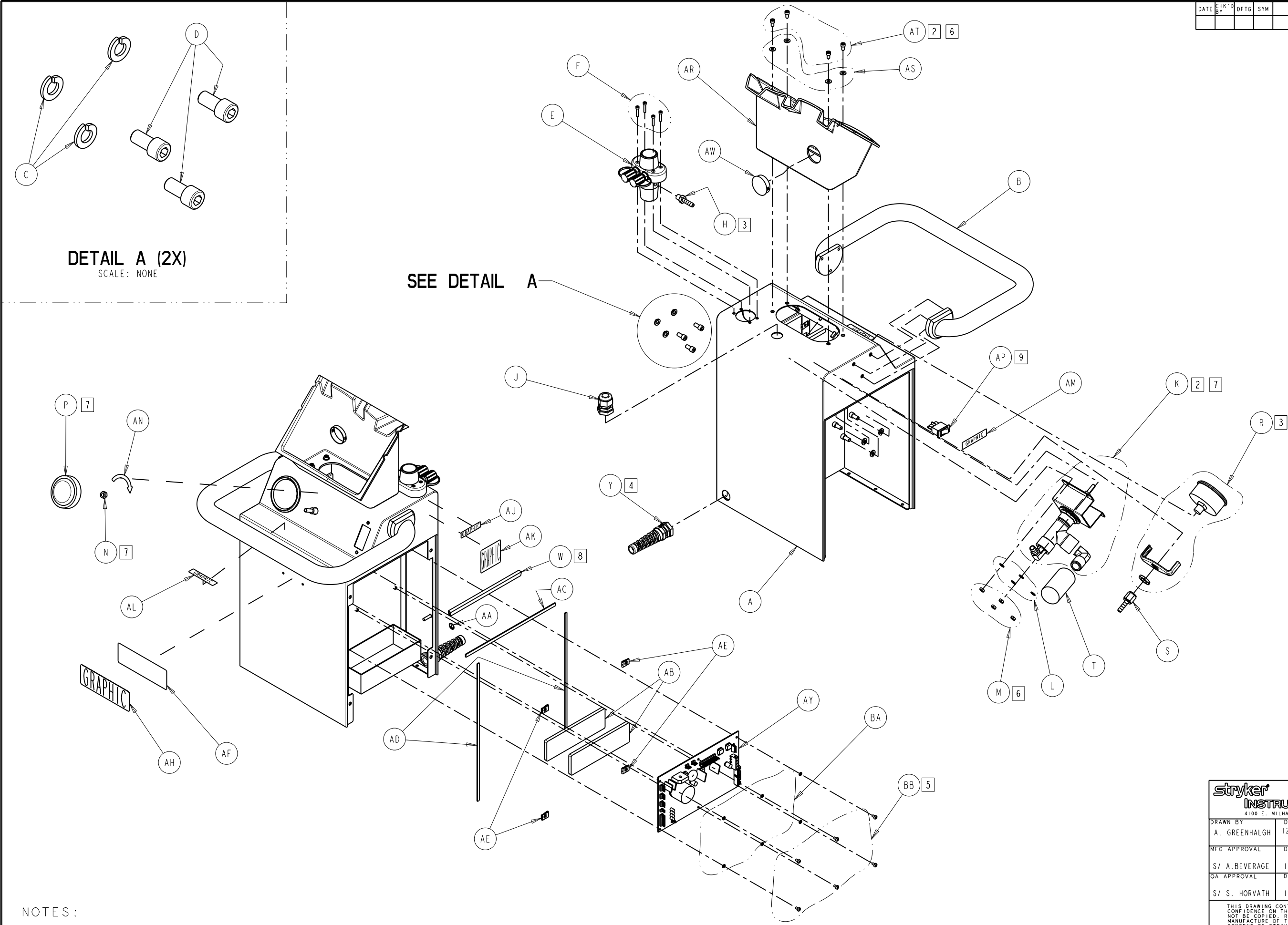
TITLE
TOWER ASSEMBLY

PART NO.
0700-902-410

REV.
NONE

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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



DETAIL A (2X)
SCALE: NONE

SEE DETAIL A

NOTES:

FORM NO. 19im009, Rev. NONE		SHEET 2 OF 2	
stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE TOWER ASSEMBLY	
MFG APPROVAL S/ A. BEVERAGE	DATE 1-03		
QA APPROVAL S/ S. HORVATH	DATE 1-03	PART NO. 0700-902-410	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

Item	Part No.	Part Name	Qty.
A	0700-001-110	BASE ROVER ASSEMBLY	1
B	0700-003-030	ROVER TRANSFORMER ASSEMBLY	1
C	0011-511-000	FLAT WASHER (#10)	4
D	0004-521-000	SHCS 10-32 X 5/8	4
E	0700-003-011	UPPER SKIRT SQUARE PLUG	1
F	0011-491-000	FLAT WASHER (#6)	4
H	0004-529-000	SHCS 6-32 X 3/8	2
J	0001-159-000	FLAT HEAD SOCKET SCREW (#8)	1
K	0016-014-000	LOCKNUT, NYLON INSERT 8-32	1
L	0011-052-000	FLAT WASHER (#4)	4
M	0004-156-000	SHCS 4-40 X 1/4	4
N	0700-003-017	ROVER POWER CORD	1
P	0700-003-412	POWER SWITCH	1
R	0700-001-409	POWER SWITCH SPLASH COVER	1

Item	Part No.	Part Name	Qty.
S	0004-525-000	SHCS 8-32 X 3/8	2
T	0013-018-000	LOCK WASHER #10 EXTERNAL	8
W	0015-004-000	HEX NUT 10-32	4
Y	0058-334-000	ADHESIVE CABLE MOUNT	1
AA	0700-003-012	UPPER SKIRT ROUND PLUG	1
AB	0004-523-000	SHCS 6-32 X 1/2	2
AC	0700-001-021	PANEL RETAINER	2
AD	0700-003-050	USER INTERFACE PANEL ASSEMBLY	1
AE	0023-282-000	#4-20 PAN HEAD SELF THREADING SCREW	4
AF	0700-003-013	TOWER LEFT PANEL	1
AH	0700-003-700	SPECIFICATION LABEL (MANIFOLD STORAGE COMPARTMENT)	1
AJ	0700-003-701	SPEC LABEL (700-3 ROVER SERIAL NUMBER)	1
AK	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR
AL	0072-002-061	RTV 108 (NOT SHOWN)	AR
AM	0034-046-000	SHRINK TUBE (NOT SHOWN)	AR
AN	0034-408-000	HEAT SHRINK TUBING (NOT SHOWN)	AR
AP	0058-330-000	CABLE TIE (NOT SHOWN)	16

- 9 CONNECT THE TERMINALS ON THE CABLE ATTACHED TO THE VACUUM PUMP TO THE TRANSFORMER ASSEMBLY.
- A. WRAP THE BLUE AROUND THE BROWN AND GREEN WIRES AND ATTACH TO TB-7A. (FLAT SIDE TOWARD TERMINAL BLOCK).
- B. ROUTE THE BROWN WIRE BEHIND THE WHITE WIRES AND CONNECT IT TO K2-1. (THE TERMINAL GOES BEHIND THE PLATE).
- C. ATTACH THE FAN CABLE TO THE TRANSFORMER ASSEMBLY. CUT THE PART NUMBER LABEL OFF THE CABLE. BE CAREFUL NOT TO DAMAGE THE INSULATION. END WITH THE K1-2 LABEL TO TB-6A. THE OTHER END TO TB-3A.
- D. ATTACH THE TRANSFORMER TO CIRCUIT BREAKER CABLE ASSEMBLY WHICH IS THE BLUE/BROWN TWISTED PAIR COMING ACROSS THE CENTER OF THE CHASSIS. BROWN WIRE TO TB-4B. BLUE WIRE TO TB-5B.
- E. CONNECT THE RED/GREEN TWISTED PAIR OF WIRES WITH THE K2-4 AND K2-3 TERMINALS TO THE K2 RELAY. (RED TO K2-3) AND (GREEN TO K2-4).
- F. CONNECT THE ORANGE/BLACK TWISTED PAIRS TO THE K3 RELAY WITH THE FLATS ON THE TERMINAL TOWARDS THE FRONT OF THE ROVER. (BLACK K3-6), (ORANGE K3-4), (BLACK K3-9) AND (ORANGE K3-7).
- G. CONNECT THE BLACK/WHITE PAIR TO THE K3 RELAY. BLACK LABELED K3-COIL (-) TO B (ON TOP) AND WHITE LABELED K3-COIL (+) TO A (ON BOTTOM).
- H. CONNECT THE BLUE/YELLOW TWISTED PAIR OF WIRES WITH THE 1LJ4 CONNECTOR TO THE MATING CONNECTOR ON THE TRANSFORMER.
- I. TORQUE TERMINALS 3 AND 4 ON THE K1 AND K2 RELAYS TO 10 IN-LBS.
- J. TORQUE TERMINALS 1 AND 2 ON THE K1 AND K2 RELAYS TO 17 IN-LBS.
- K. TORQUE SCREWS ON TERMINAL BLOCK TO 10 IN-LBS. IF TERMINALS CAN STILL BE MOVED, HAND-TIGHTEN FURTHER.

- 8 PLACE THE FOLLOWING SEQUENCE OF PARTS ONTO THE GROUND STUD INSIDE THE RIGHT SIDE OF TOWER TO THE RIGHT OF THE BATTERY TRAY:
- A. #10 EXTERNAL LOCK WASHER (0013-018-000).
- B. GREEN/YELLOW WIRE OF POWER CORD.
- C. #10 EXTERNAL LOCK WASHER (0013-018-000).
- D. 10-32 HEX NUT (0015-004-000).
- E. TORQUE NUT TO 25 IN-LBS.
- F. #10 EXTERNAL LOCK WASHER (0013-018-000).
- G. PROTECTIVE EARTH GROUND CABLE (GREEN/YELLOW WIRE).
- H. 10-32 HEX NUT (0015-004-000).
- I. TORQUE NUT TO 25 IN-LBS.

- 7 SNAP POWER SWITCH INTO CUTOUT IN THE FRONT TOWER ASSEMBLY. THE "ON" POSITION SHOULD BE ON TOP. THE FOLLOWING APPLIES WHILE LOOKING STRAIGHT AT THE TERMINALS ON THE BACK OF THE POWER SWITCH:
- A. ROUTE BLUE AND BROWN WIRES ON POWER CORD TO THE POWER SWITCH. BLUE WIRE ON BOTTOM LEFT AND BROWN WIRE ON BOTTOM RIGHT.
- B. ROUTE THE TRANSFORMER TO CIRCUIT BREAKER CABLE UP THE BACK SURFACE OF THE TOWER AND CONNECT THE BLUE WIRE TO THE TOP LEFT TERMINAL AND THE BROWN WIRE TO THE TOP RIGHT TERMINAL OF THE POWER SWITCH.

- 6 WHEN REPLACING THE PLUG ON THE POWER CORD, TWIST STRANDS OF BROWN WIRE TOGETHER AND INSERT INTO BLACK SOCKET. TWIST STRANDS OF BLUE WIRE TOGETHER AND INSERT INTO CLEAR SOCKET. TWIST STRANDS OF GREEN WIRE TOGETHER AND INSERT INTO GREEN SOCKET. NOTE: GREEN WIRE SHOULD BE SLIGHTLY LONGER THAN THE OTHER TWO WIRES.

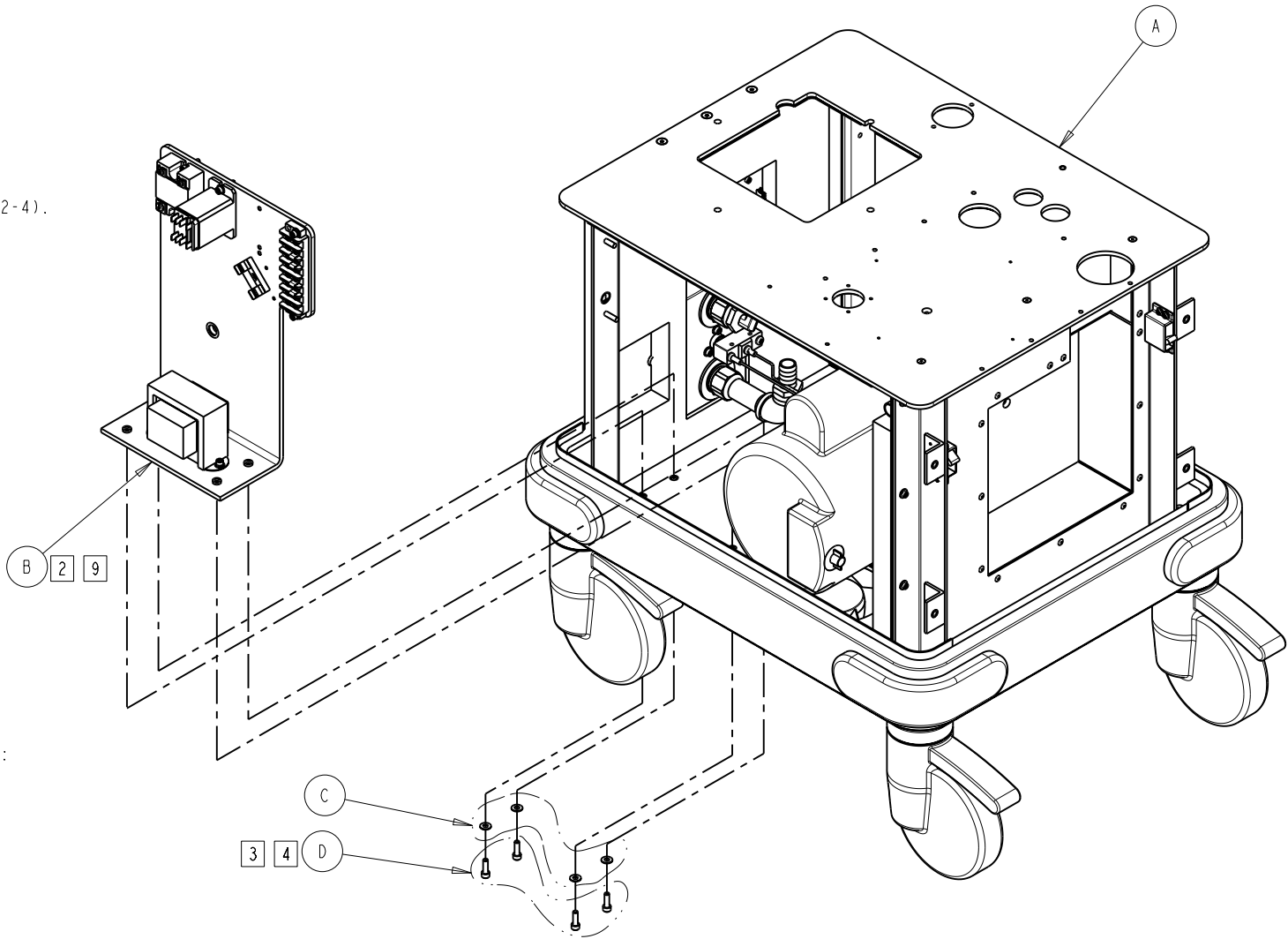
- 5 TORQUE TO 11 IN-LBS.

- 4 TORQUE TO 40 IN-LBS.

- 3 APPLY LOCTITE 222.

- 2 MAKE SURE FAN CABLE AND FITTINGS ON COUPLINGS ARE OUT OF THE WAY PRIOR TO ASSEMBLING.

1. APPLIES TO ROVER MODEL 700-3.



- 10 PLACE THE FOLLOWING SEQUENCE OF PARTS ONTO THE GROUND STUD ON THE BACK LEFT CHASSIS SUPPORT BY THE TRANSFORMER.
- A. #10 EXTERNAL LOCK WASHER (0013-018-000).
- B. GREEN/YELLOW WIRE FROM PUMP TO TRANSFORMER CABLE ASSEMBLY.
- C. #10 EXTERNAL LOCK WASHER (0013-018-000).
- D. 10-32 HEX NUT (0015-004-000).
- E. TORQUE NUT TO 25 IN-LBS.
- F. #10 EXTERNAL LOCK WASHER (0013-018-000).
- G. GREEN/YELLOW WIRE OF PROTECTIVE EARTH GROUND CABLE ASSEMBLY (FROM SLIT CONDUIT).
- H. #10 EXTERNAL LOCK WASHER (0013-018-000).
- I. 10-32 HEX NUT (0015-004-000).
- J. TORQUE TO 25 IN-LBS.

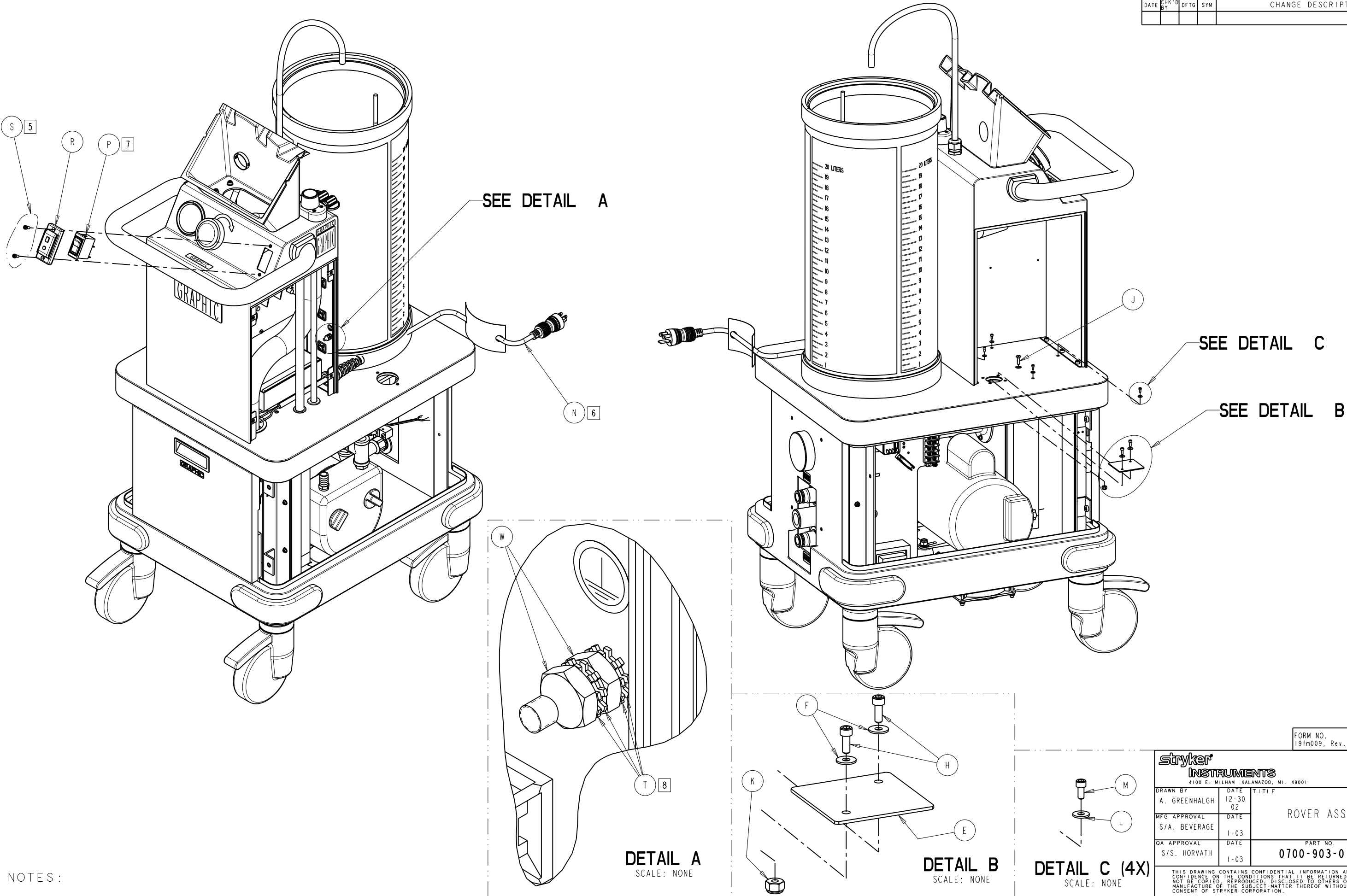
NOTES:

FORM NO. 191m009, Rev. NONE	SHEET 1 OF 6
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stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH	DATE 12-30-02	TITLE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-903-010	REV. NONE

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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

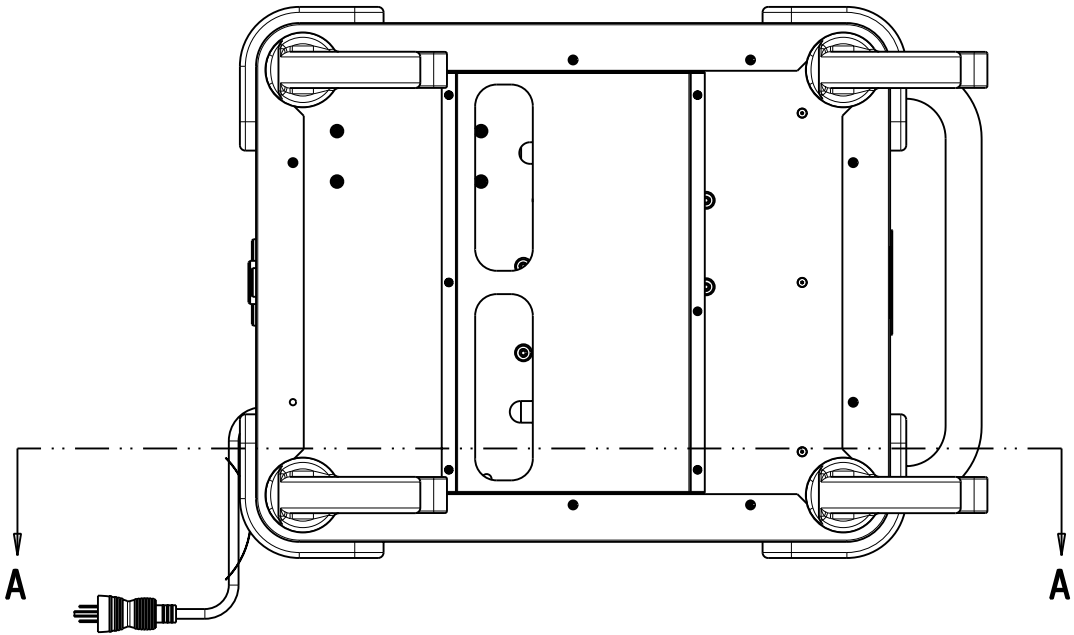
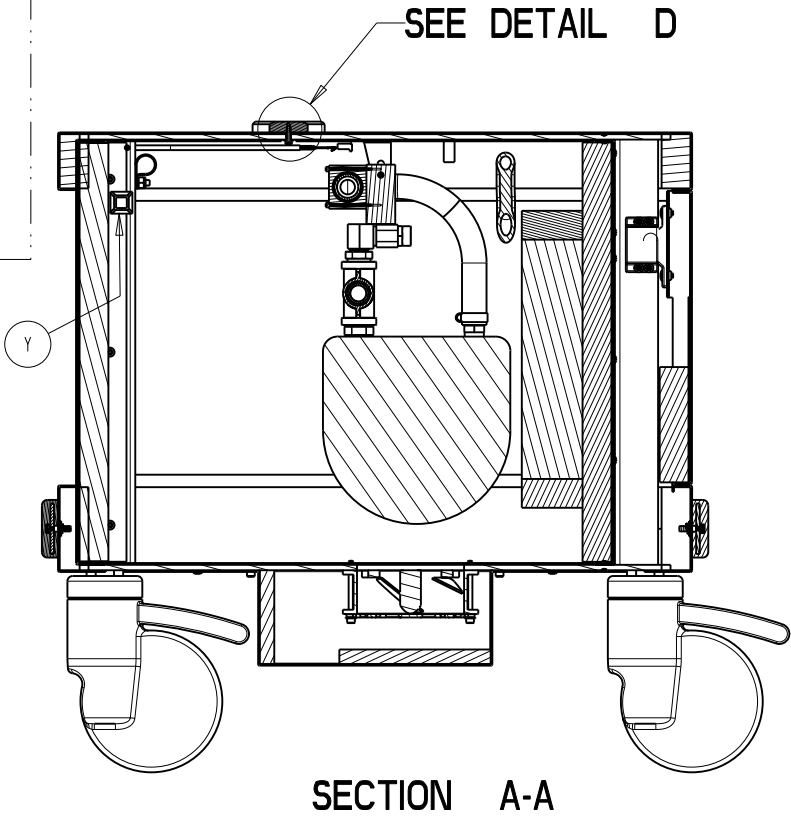
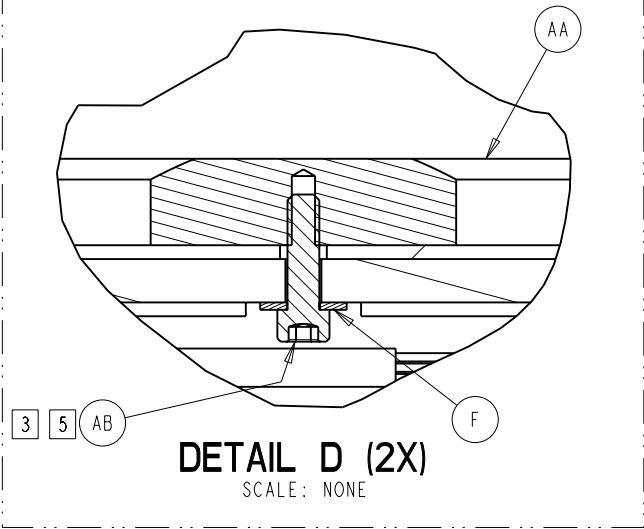
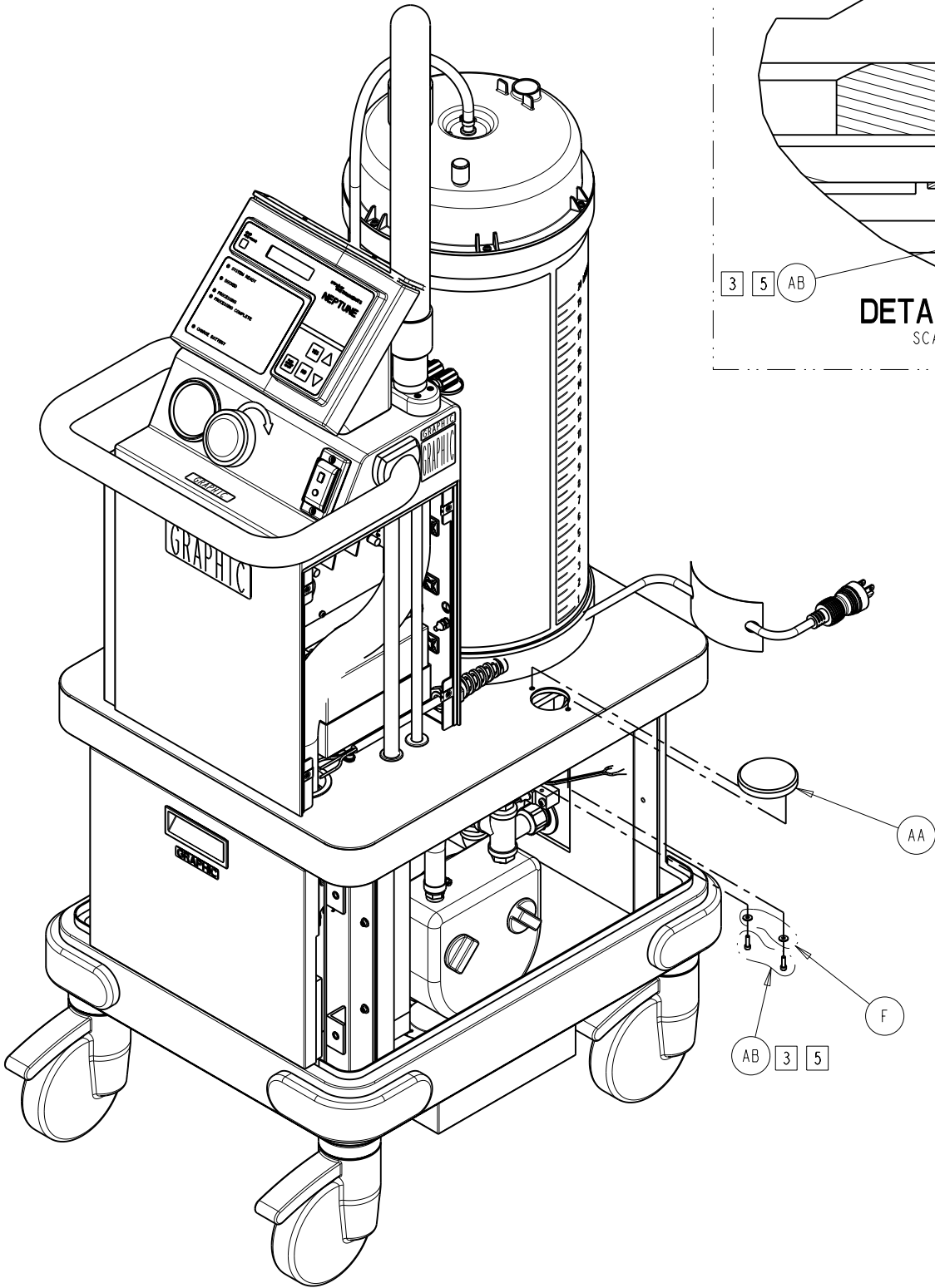


NOTES:

FORM NO. 191m009, Rev. NONE	SHEET 2 OF 6
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stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH	DATE 12-30-02	TITLE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03		
		PART NO. 0700-903-010	REV. NONE
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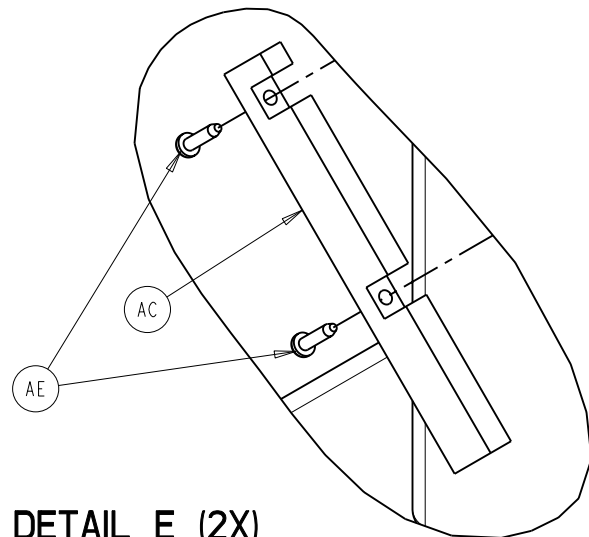
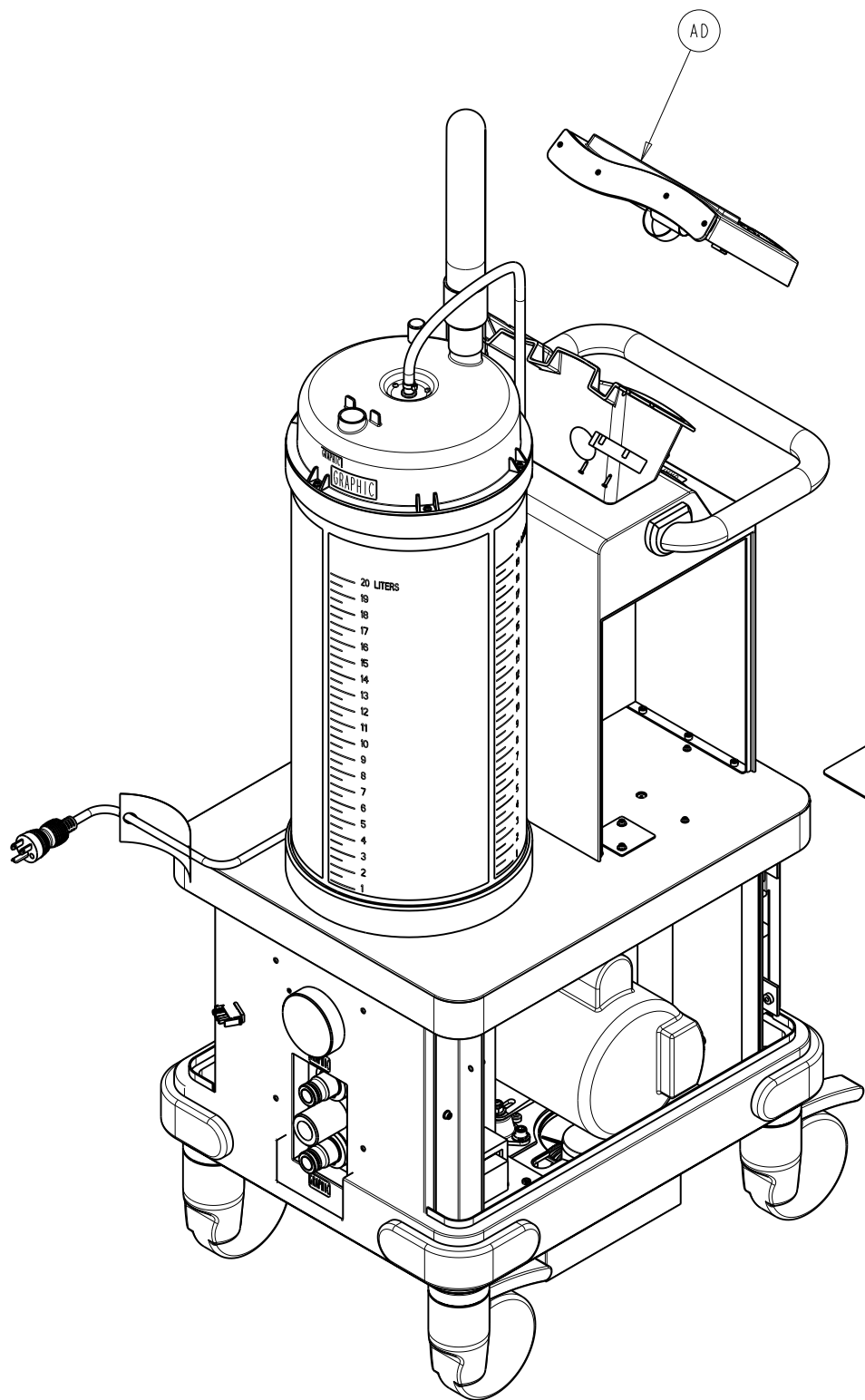
DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



NOTES :

FORM NO. 19im009, Rev. NONE	SHEET 3 OF 6
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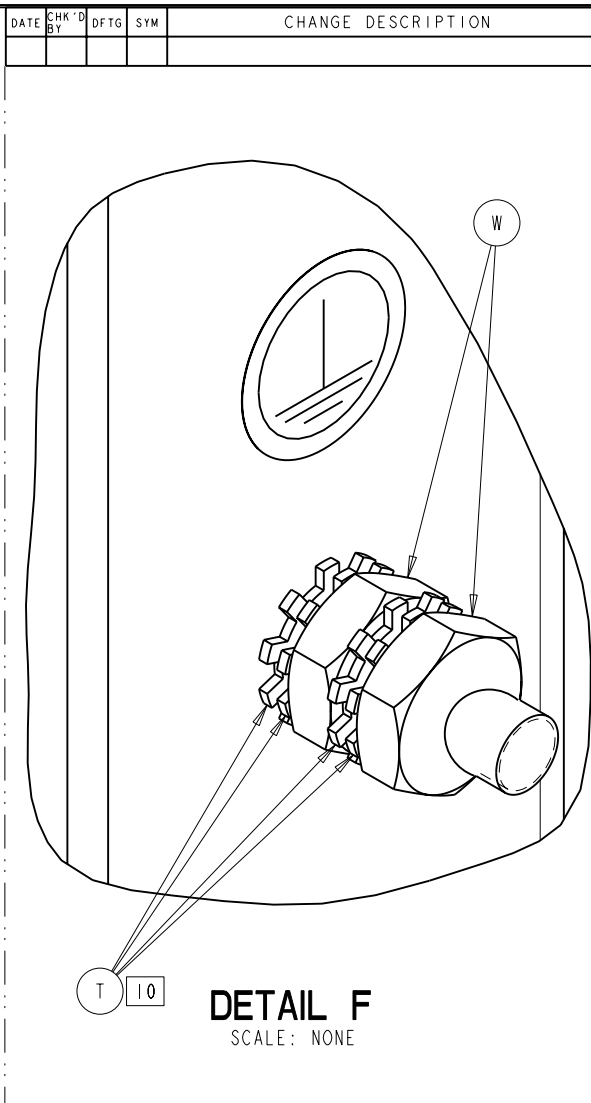
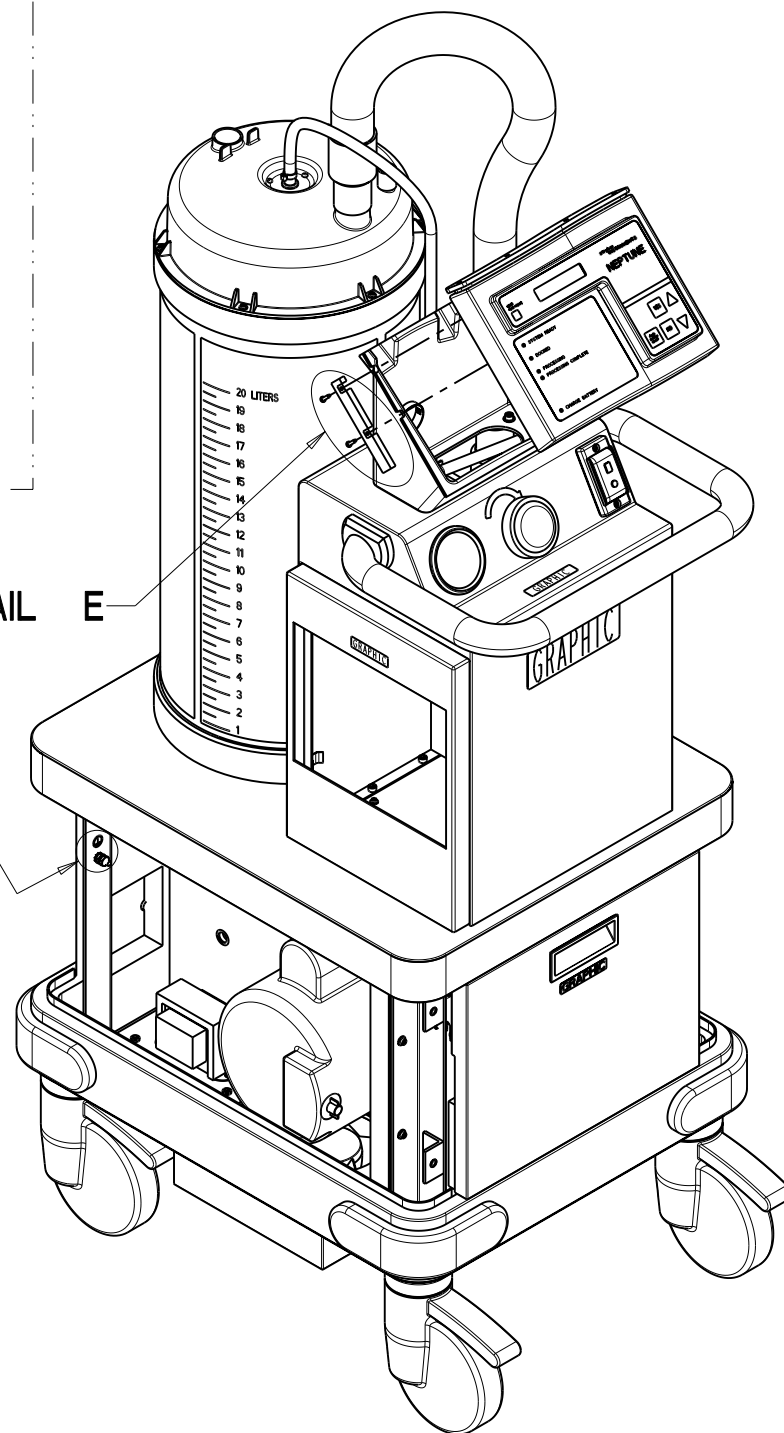
stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-30-02	TITLE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03		
		PART NO. 0700-903-010	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			



DETAIL E (2X)
SCALE: NONE

SEE DETAIL E

SEE DETAIL F



DETAIL F
SCALE: NONE

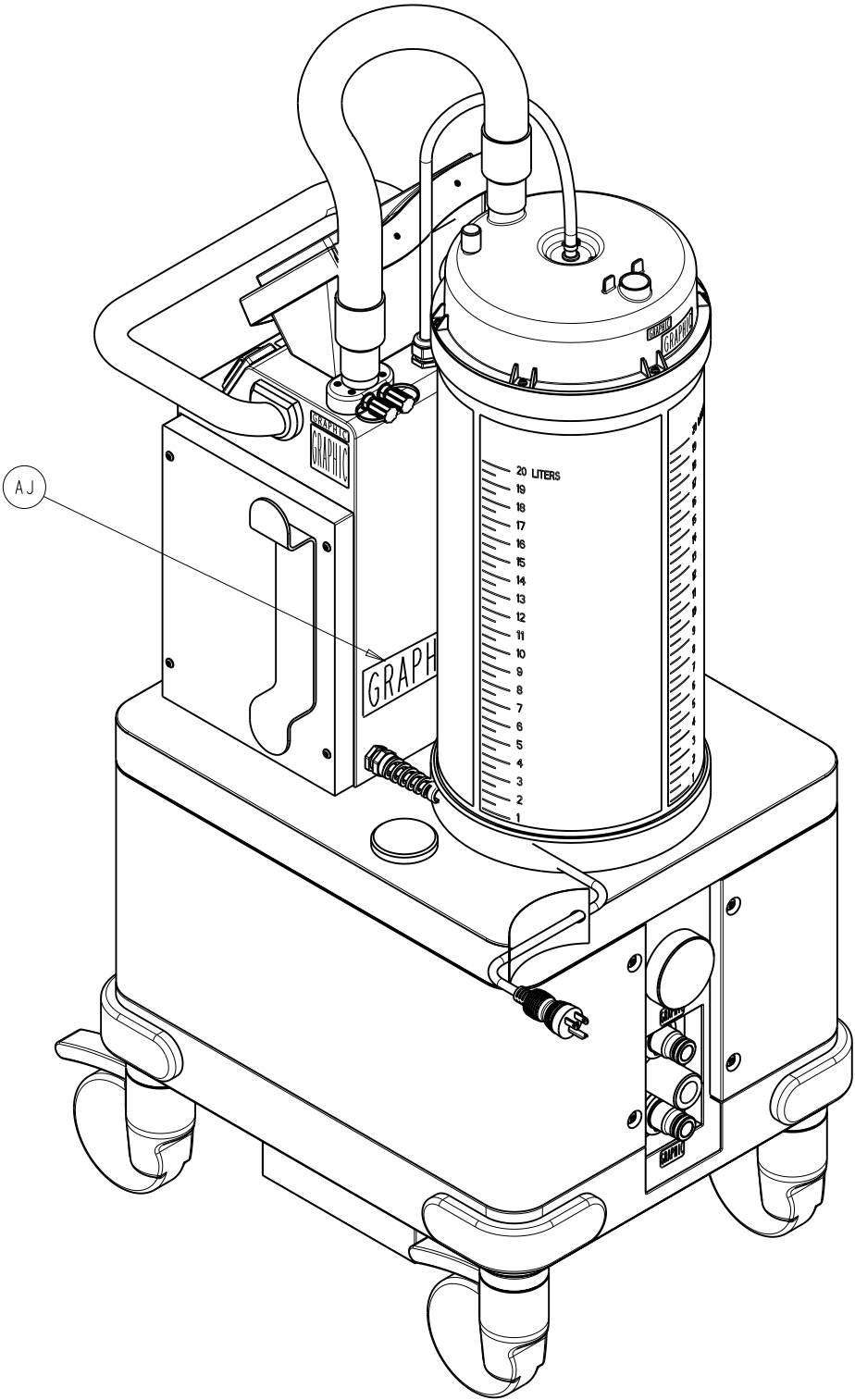
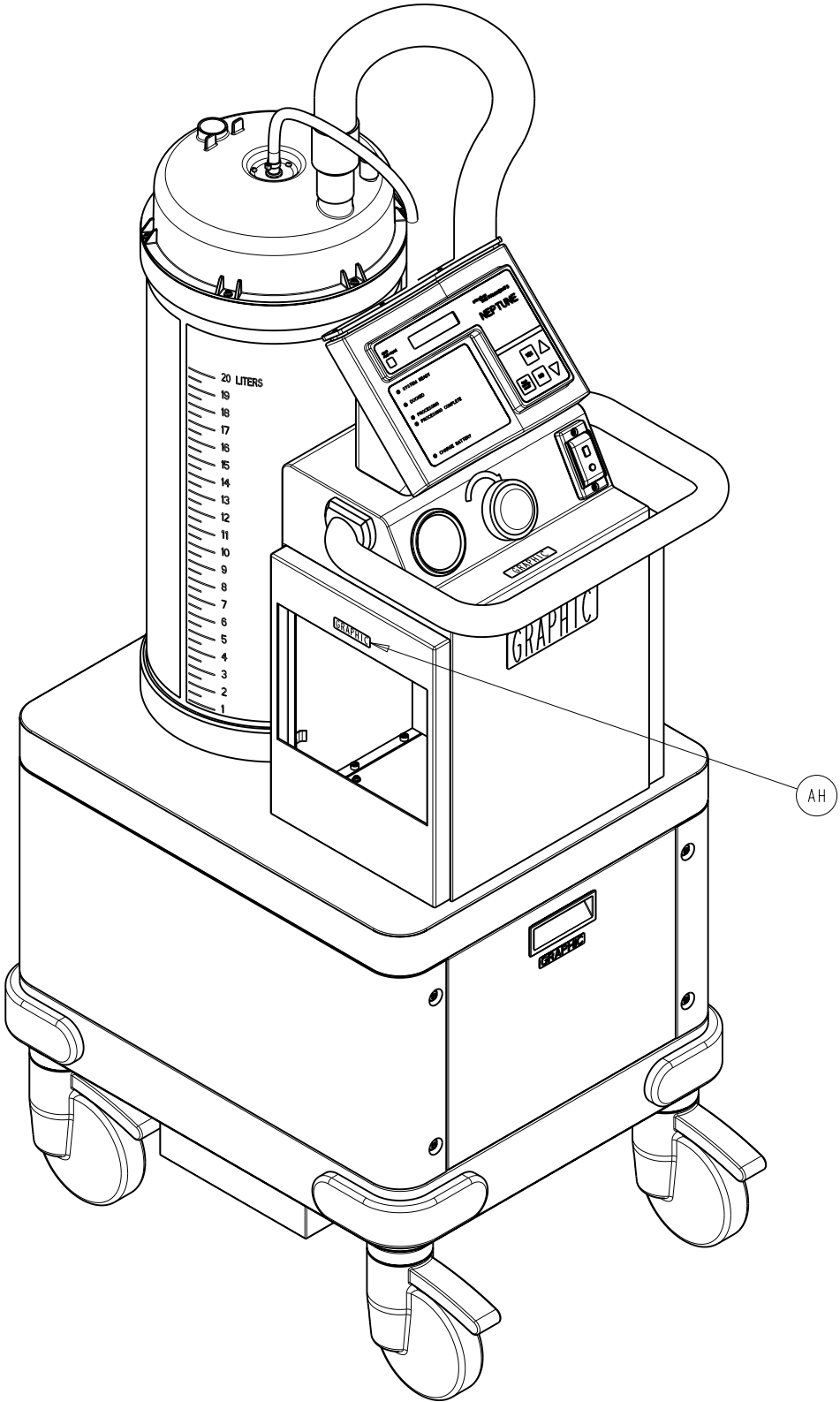
NOTES:

FORM NO. 191m009, Rev. NONE SHEET 4 OF 6

stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-30-02	TITLE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03		
		PART NO. 0700-903-010	REV. NONE

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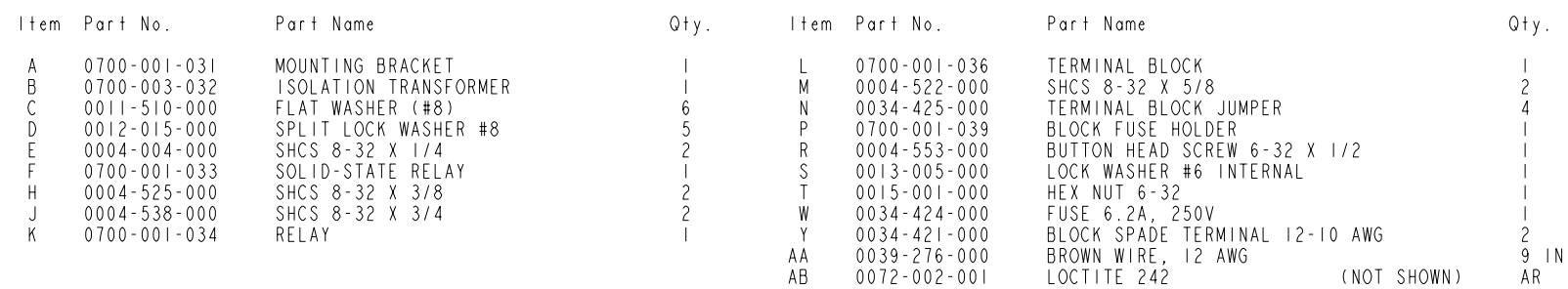
DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



NOTES :

FORM NO. 19im009, Rev. NONE	SHEET 5 OF 6
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-30-02	TITLE ROVER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03		
		PART NO. 0700-903-010	REV. NONE
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SCALE: NONE

8 CONNECT BLACK WIRE FROM SAME SIDE OF TRANSFORMER AS THE WHITE WIRE WITH THE CONNECTOR TO TB-4A.

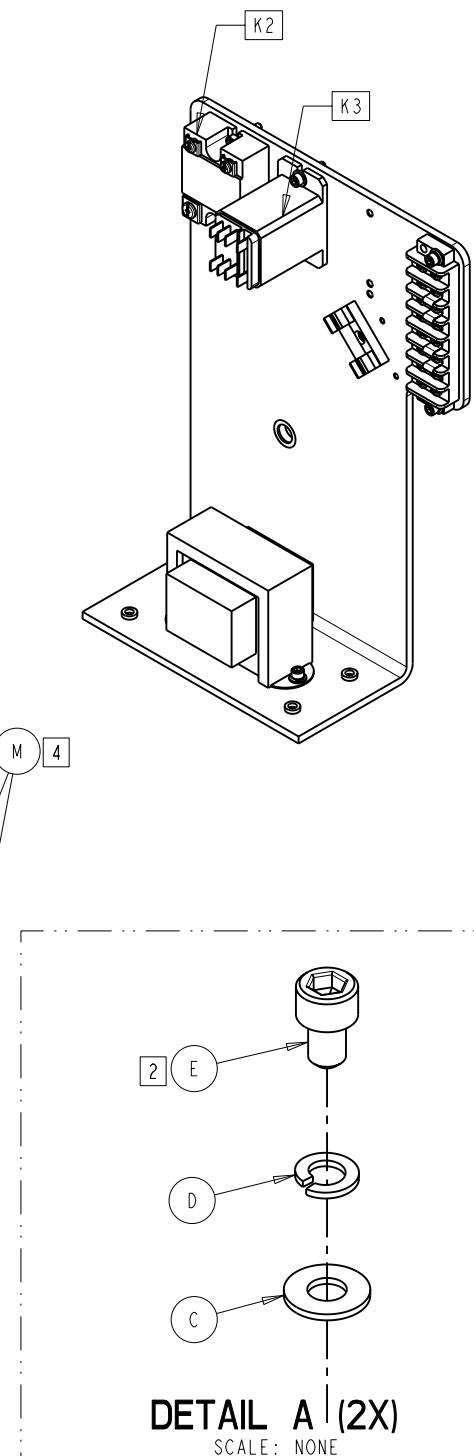
7 TIGHTEN 1B, 2B, 3B, 6B, 7B, 1A AND 8A TO 12 IN-LBS. ALL OTHER TERMINALS SHOULD BE HAND TIGHT.

6 ASSEMBLE TERMINAL BLOCK JUMPERS TO THE FOLLOWING TERMINALS (2B TO 3B), (3B TO 4B), (5B TO 6B) AND (6B TO 7B).

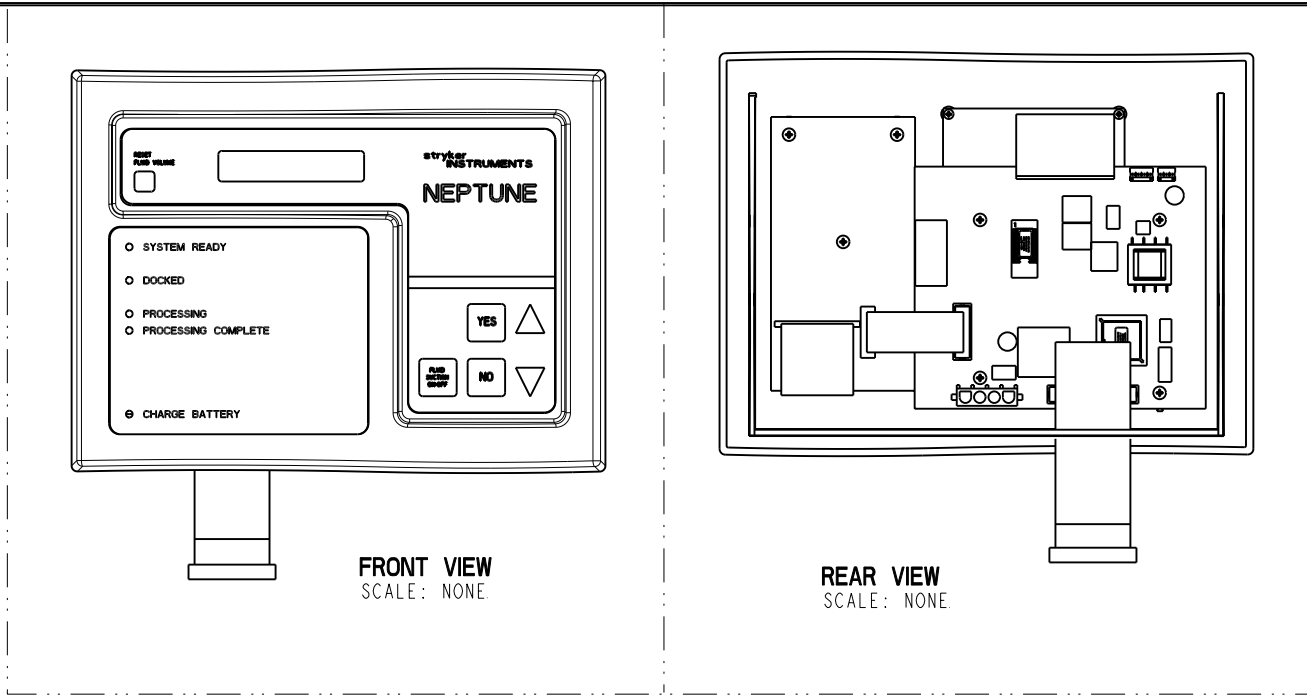
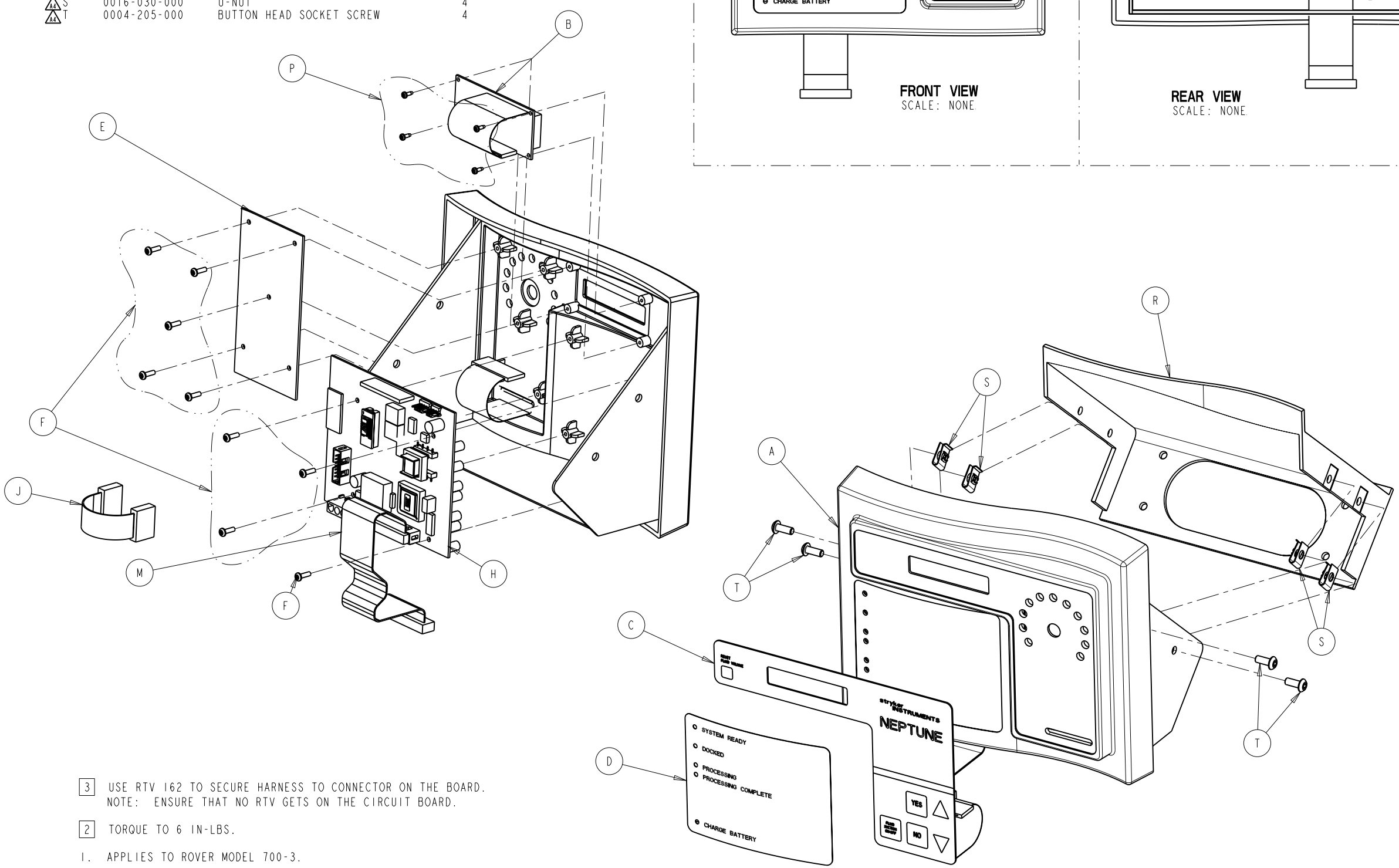
SEE DETAIL A

- 9 CONNECT BLACK WIRE FROM SAME SIDE OF TRANSFORMER AS THE WHITE WIRE WITHOUT THE CONNECTOR TO TB-5A.

—SEE DETAIL A



ITEM	PART NO.	PART NAME	QTY.
A	0700-001-051	USER INTERFACE PANEL	1
B	0700-001-054	ROVER LCD DISPLAY ASSY	1
C	0700-003-056	MEMBRANCE SWITCH	1
D	0700-003-055	OVERLAY	1
E	0712-039-001	MEMBRANE INTERFACE PCBA, ROVER	1
F	0050-059-000	PAN HEAD SCREW #4 X 3/8	9
H	0712-064-001	ROVER MAIN CONTROLLER PCBA	1
J	0700-001-052	RIBBON CABLE	1
M	0700-001-114	RIBBON CABLE	1
N	0072-002-032	RTV 162 (NOT SHOWN)	AR
P	0023-073-000	PHILLIPS PAN HEAD #2 X 1/4 SS	4
R	0700-001-115	USER INTERFACE PANEL TOWER	1
S	0016-030-000	U-NUT	4
T	0004-205-000	BUTTON HEAD SOCKET SCREW	4



DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION
11-4-04	S/KB	PE	A	REVISED PICTORIALY ECO 04Y2E08312
			A1	WAS: ITEM F 0050-059-000 PAN HEAD...13
			A2	REMOVED: ITEM K 0700-001-058 SEAL GASKET...
			A3	REMOVED: ITEM L 0700-001-053 PANEL COVER...
			A4	ADDED: ITEM P 0023-073-000 PHILLIPS PAN...4 ITEM R 0700-001-115 USER INTERFACE...1 ITEM S 0016-030-000 U-NUT 4 ITEM T 0004-205-000 BUTTON HEAD...4

- 3 USE RTV 162 TO SECURE HARNESS TO CONNECTOR ON THE BOARD.
NOTE: ENSURE THAT NO RTV GETS ON THE CIRCUIT BOARD.
- 2 TORQUE TO 6 IN-LBS.
1. APPLIES TO ROVER MODEL 700-3.

NOTES:

FORM NO. 191m009, Rev. NONE SHEET 1 OF 1

stryker
INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

DRAWN BY
A. GREENHALGH

MFG APPROVAL
S/A. BEVERAGE

QA APPROVAL
S/S. HORVATH

DATE
12-20-02

DATE
1-03

DATE
1-03

TITLE
USER INTERFACE PANEL ASSEMBLY

PART NO.
0700-903-050

REV.
A

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Item	Part No.	Part Name	Qty.	Item	Part No.	Part Name	Qty.	Item	Part No.	Part Name	Qty.
A	0700-004-210	CHASSIS ASSEMBLY	1	AC	0700-004-013	WATER DRAIN FITTING	1	BH	0058-333-000	NYLON LOOP CLAMP	3
B	0700-004-080	OFFLOAD PUMP ASSEMBLY	1	AD	0015-074-000	HEX JAM NUT 1-14	2	BJ	0016-014-000	LOCKNUT, NYLON INSET 8-32	7
C	0011-507-000	FLAT WASHER	4	AE	0048-199-000	BARBED FITTING 1/2 X 3/8	1	BK	0058-334-000	ADHESIVE CABLE MOUNT	18
D	0004-542-000	SHCS 1/4-20 X 1-1/4	4	AF	0700-004-015	CAM AND GROOVE COUPLING, MALE	1	BL	0052-507-000	STANDOFF 8-32 X 1	2
E	0015-005-000	HEX NUT 1/4-20	4	AH	0700-004-014	WATER INLET FITTING	1	BM	0015-002-000	HEX NUT 8-32	2
F	0700-004-070	ACTUATOR ASSEMBLY	1	AJ	0048-196-000	HEX REDUCING NIPPLE	1	BN	0052-506-000	STANDOFF 8-32 X 3/4	2
H	0004-550-000	BHCS 3/8-16 X 3/4	6	AK	0700-004-016	BACKFLOW PREVENTION VALVE	1	BP	0700-004-017	POWER SUPPLY SHIELD	1
J	0700-004-061	REAR PANEL	1	AL	0048-198-000	BARBED FITTING 1/2 X 1/2	1	BR	0700-004-011	TOP COVER	1
K	0590-060-006	POWER SWITCH	1	AM	0060-010-000	BRAIDED TUBING 1/2" ID	36 IN	BS	0015-004-000	HEX NUT 10-32	1
L	0700-001-415	FLEX STYLE STRAIN RELIEF	1	AN	0058-325-000	HOSE CLAMP	10	BT	0700-001-709	SPEC LABEL (WASTE)	1
M	0700-004-065	POWER CORD ASSEMBLY	1	AP	0700-004-019	DOCKER GROUND CABLE ASSEMBLY (NOT SHOWN)	1	BW	0700-001-708	SPEC LABEL (WATER)	1
N	0004-549-000	BHCS 10-32 X 3/8	12	AR	0700-004-103	POWER SUPPLY CABLE (NOT SHOWN)	1	BY	0044-048-000	VHB TAPE	5 IN
P	0700-004-012	WALL ANCHORING RAIL	2	AS	0036-046-000	LABEL, PROTECTIVE EARTH (GRD)	2	CA	0700-001-718	SPEC LABEL (NEPTUNE PLACARD)	1
R	0004-521-000	SHCS 10-30 X 5/8	8	AT	0013-018-000	LOCK WASHER #10 EXTERNAL	6	CB	0700-004-707	PINCH POINT WARNING LABEL	1
S	0700-004-041	RIGHT DOOR WELDMENT	1	AW	0016-025-000	LOCKNUT, NYLON INSERT 10-32	2	CC	0700-004-701	SPEC LABEL (700-4 DOCKER S/N LABEL)	1
T	0700-004-050	PNEUMATICS PANEL ASSEMBLY	1	AY	0034-427-000	SLIT-CONVOLUTED CONDUIT (NOT SHOWN)	6 IN	CD	0700-004-703	SPEC LABEL (INPUT WATER PRESSURE WARNING)	1
W	0004-525-000	SHCS 8-32 X 3/8	14	BA	0058-330-000	CABLE TIE (NOT SHOWN)	44	CE	0044-049-000	TEFLON TAPE, 1/2" (NOT SHOWN)	AR
Y	0700-004-032	SLOTTED CAM LATCH	2	BB	0700-004-102	POWER SUPPLY TO PCB CABLE (NOT SHOWN)	1	CF	0072-002-001	LOCTITE 242 (NOT SHOWN)	AR
AA	0700-004-031	LEFT DOOR WELDMENT	1	BC	0700-004-112	OPTICAL SWITCH WIRE HARNESS (NOT SHOWN)	1	CH	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR
AB	0700-004-020	POWER SUPPLY PANEL ASSEMBLY	1	BD	0700-004-111	DOCKER MAIN WIRE HARNESS ASSY (NOT SHOWN)	1				
				BE	0700-004-114	AIR PUMP WIRE HARNESS (NOT SHOWN)	1				
				BF	0700-004-116	PNEUMATICS WIRE HARNESS (NOT SHOWN)	1				

15 ENSURE ARROW ON BACK FLOW VALVE IS POINTING DOWNWARDS WHEN INSTALLED.

- 14 CONNECTING POWER SWITCH:
- A. ON INSIDE PANEL, CONNECT THE BLUE WIRE FROM THE POWER CORD 0700-004-065 TO THE BOTTOM LEFT MALE TERMINAL ("OFF" POSITION) OF THE POWER SWITCH.
 - B. ON INSIDE PANEL, CONNECT THE BROWN WIRE FROM THE POWER CORD 0700-004-065 TO THE BOTTOM RIGHT MALE TERMINAL ("OFF" POSITION) OF THE POWER SWITCH.
 - C. PLACE BLUE WIRE CONNECTOR OF POWER SUPPLY CABLE 0700-004-103 COMPLETELY OVER THE UPPER LEFT POWER SWITCH SPADE TERMINAL.
 - D. PLACE BROWN WIRE CONNECTOR OF POWER SUPPLY CABLE 0700-004-103 COMPLETELY OVER THE UPPER RIGHT POWER SWITCH SPADE TERMINAL.

13 TIGHTEN FROM THE INSIDE OF THE PANEL WITH THE NUT PROVIDED TO 35 IN-LBS. THEN INSERT POWER CORD ASSEMBLY 0700-001-415 INTO THE STRAIN RELIEF FROM THE OUSIDE OF THE PANEL AND TIGHTEN FROM THE INSIDE WITH THE NUT PROVIDED. TORQUE STRAIN RELIEF HEX TO 25 IN-LBS.

12 TORQUE TO 80 IN-LBS. ENSURE THAT BACK FLOW PREVENTION VALVE HOLDER DOES NOT SPIN.

11 APPLY LOCTITE 242 TO THE BOTTOM EXTERNAL THREADS. THEN APPLY 1/2" TEFLON TAPE TO THE TOP THREADS ONLY. WRAP 8 TIMES CLOCKWISE TO ENSURE FITTING IS WATERTIGHT.

10 TORQUE TO 360 IN-LBS.

9 TORQUE TO 240 IN-LBS.

8 TORQUE TO 40 IN-LBS.

7 TORQUE TO 25 IN-LBS.

6 TORQUE TO 11 IN-LBS.

5 TORQUE TO 6 IN-LBS.

4 APPLY TEFLON TAPE IN A CLOCKWISE DIRECTION ON THREADS.

3 APPLY LOCTITE 222.

2 APPLY LOCTITE 242.

1. APPLIES TO DOCKER MODEL 700-4 (NON-SOAPY DOCKER).

- 20 CONNECT PNEUMATICS PANEL:
- A. PLACE COMMON TERMINAL OF PNEUMATICS WIRE HARNESS (0700-004-116) ON THE TOP TERMINAL SPADE OF THE PNEUMATICS PANEL PRESSURE SWITCH.
 - B. PLACE THE N.C. TERMINAL ONTO THE BOTTOM TERMINAL SPADE OF THE PRESSURE SWITCH.
 - C. ON THE PNEUMATICS PANEL, LOCATE THE PNEUMATIC TUBING ATTACHED TO PORT 1 ON THE 410 SOLENOID (PORT FURTHEST AWAY FROM PANEL). ATTACH THE TUBING TO THE PNEUMATIC ELBOW FITTING AT THE FRONT SIDE OF THE ACTUATOR ASSEMBLY 0700-004-070. PUSH TUBING COMPLETELY OVER THE FITTING UNTIL BOTTOMED ON THE FITTING WALL.
 - D. ON THE PNEUMATICS PANEL, LOCATE THE PNEUMATIC TUBING ATTACHED TO PORT 2 ON THE 410 SOLENOID. ATTACH THE TUBING TO THE PNEUMATIC ELBOW FITTING AT THE REAR SIDE OF THE ACTUATOR ASSEMBLY 0700-004-070. PUSH TUBING COMPLETELY OVER THE FITTING UNTIL BOTTOMED ON THE FITTING WALL.

- 19 ATTACH THE FOLLOWING WIRES TO GROUND STUD:
- A. LARGER GREEN/YELLOW WIRE TERMINAL OF 0700-004-019 DOCKER GROUND CABLE ASSEMBLY BETWEEN TWO #10 LOCK WASHERS AND THEN PLACE HEX NUT 0015-004-000 ONTO GROUND STUD AND TORQUE TO 25 IN-LBS.
 - B. PLACE LOCK WASHER ON GROUND STUD. ATTACH GREEN/YELLOW WIRE TERMINAL FROM CABLE HARNESS 0700-004-111 (OTHER END IS CONNECTED TO 1LJ2) TO GROUND STUD. PLACE OTHER LOCK WASHER OVER WIRE TERMINAL AND TORQUE LOCKNUT TO 25 IN-LBS.

- 18 ATTACH CONNECTIONS ON POWER SUPPLY PANEL ASSEMBLY (0700-004-020) AS FOLLOWS:
- A. INSERT SCREW THROUGH SMALLER RING TERMINAL OF THE DOCKER GROUND CABLE (0700-004-019) AND THREAD INTO BOTTOM SCREW OF 3 TERMINAL BLOCK.
 - B. PLACE BLUE WIRE FORK TERMINAL UNDER MIDDLE SCREW OF 3-TERMINAL BLOCK ON THE POWER SUPPLY AND FASTEN ENOUGH TO HOLD FORK.
 - C. PLACE BROWN WIRE FORK TERMINAL UNDER TOP SCREW OF 3-TERMINAL BLOCK ON THE POWER SUPPLY AND FASTEN ENOUGH TO HOLD FORK.
 - D. CONNECT POWER SUPPLY TO PCB CABLE (0700-004-102) TO POWER SUPPLY EIGHT-TERMINAL BLOCK. TERMINAL POSITIONS ARE NUMBERED 1-8 FROM TOP AND CABLE TERMINALS ARE NUMBERED 8-1 FROM TOP. TORQUE ALL SCREWS TO 11 IN-LBS.

17 PLACE THE GREEN/YELLOW WIRE TERMINAL FROM POWER CORD OVER GROUNDING STUD BETWEEN LOCK WASHERS. TORQUE TO 25 IN-LBS.

16 STAGGER HOSE CLAMPS SO THAT SCREWS ARE NOT LINED UP WITH EACH OTHER.

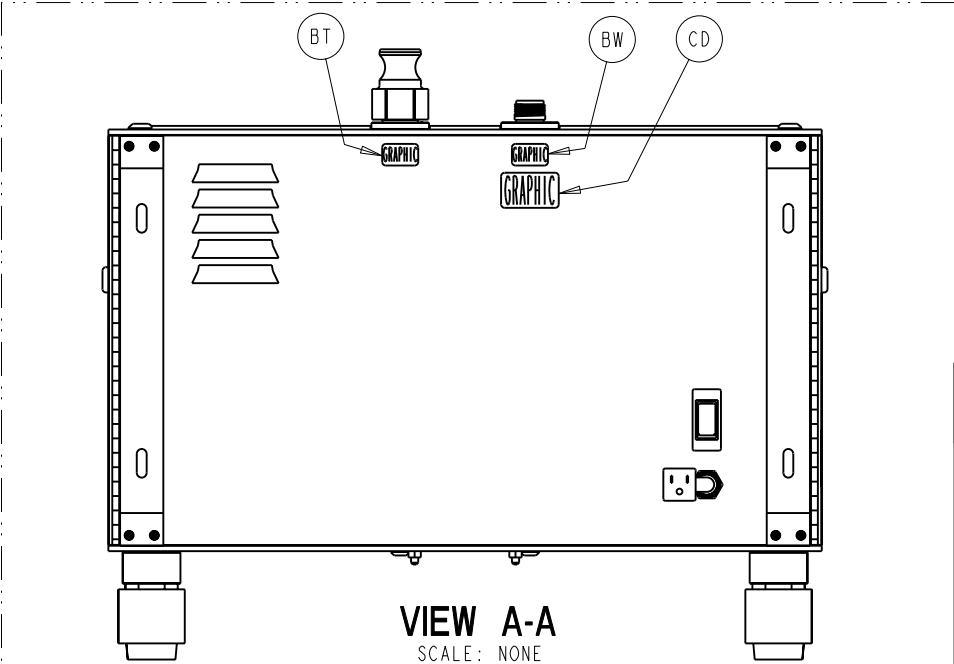
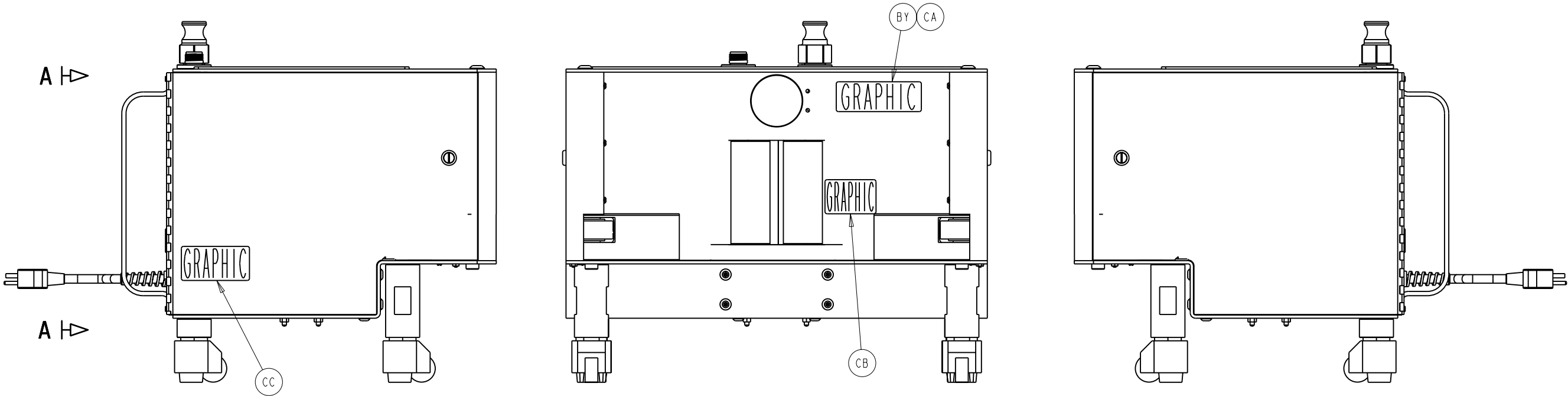
NOTES:

FORM NO.
191m009, Rev. NONE

SHEET
1 OF 7

stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH		DATE 1-8-03	TITLE NEPTUNE DOCKER ASSEMBLY
MFG APPROVAL S/A. BEVERAGE		DATE 1-03	
QA APPROVAL S/S. HORVATH		DATE 1-03	PART NO. 0700-904-010
			REV. NONE
THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.			

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



VIEW A-A
SCALE: NONE

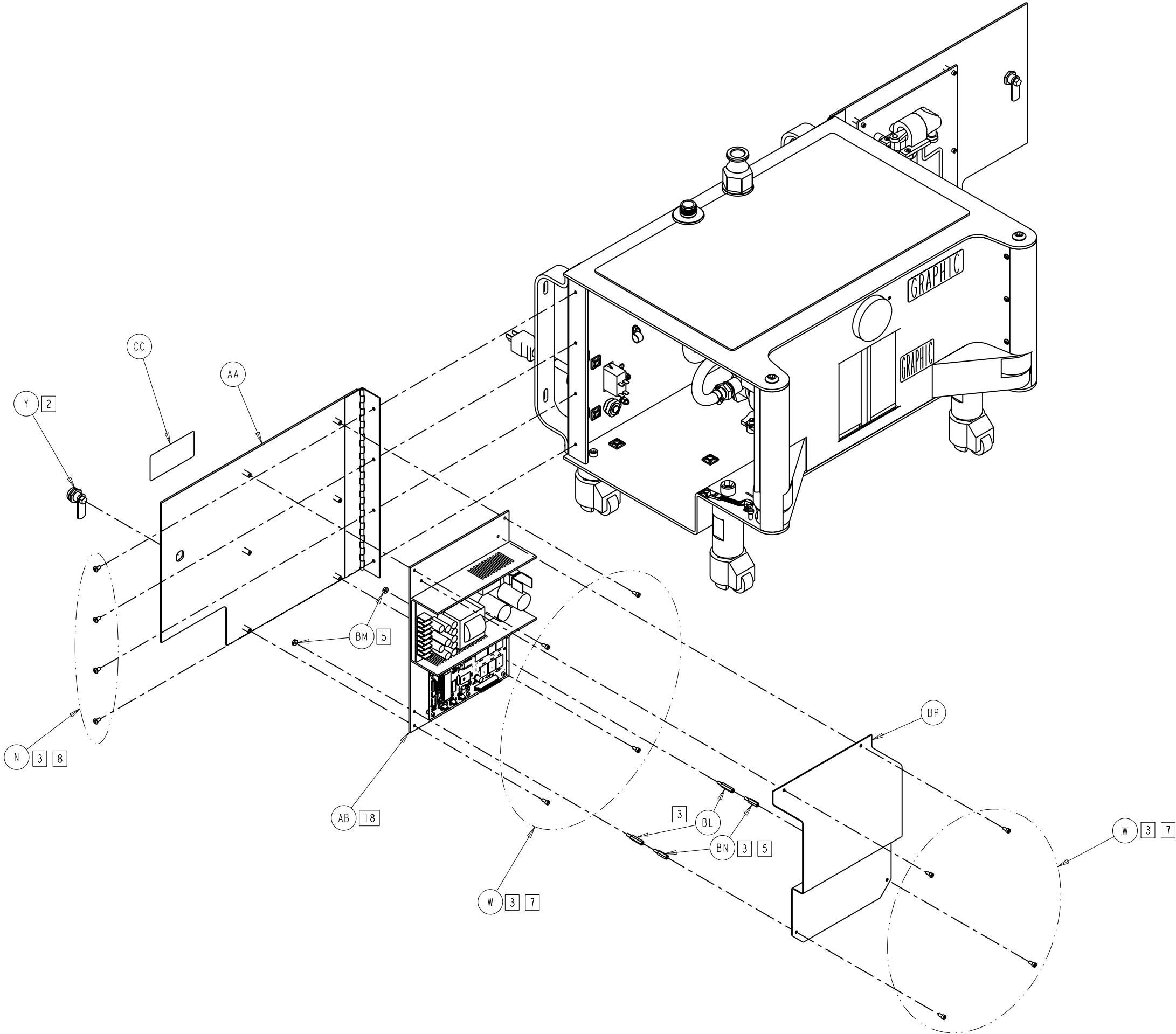
NOTES:

FORM NO. 191m009, Rev. NONE	SHEET 2 OF 7
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 1-8 03	TITLE NEPTUNE DOCKER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-904-010	REV. NONE

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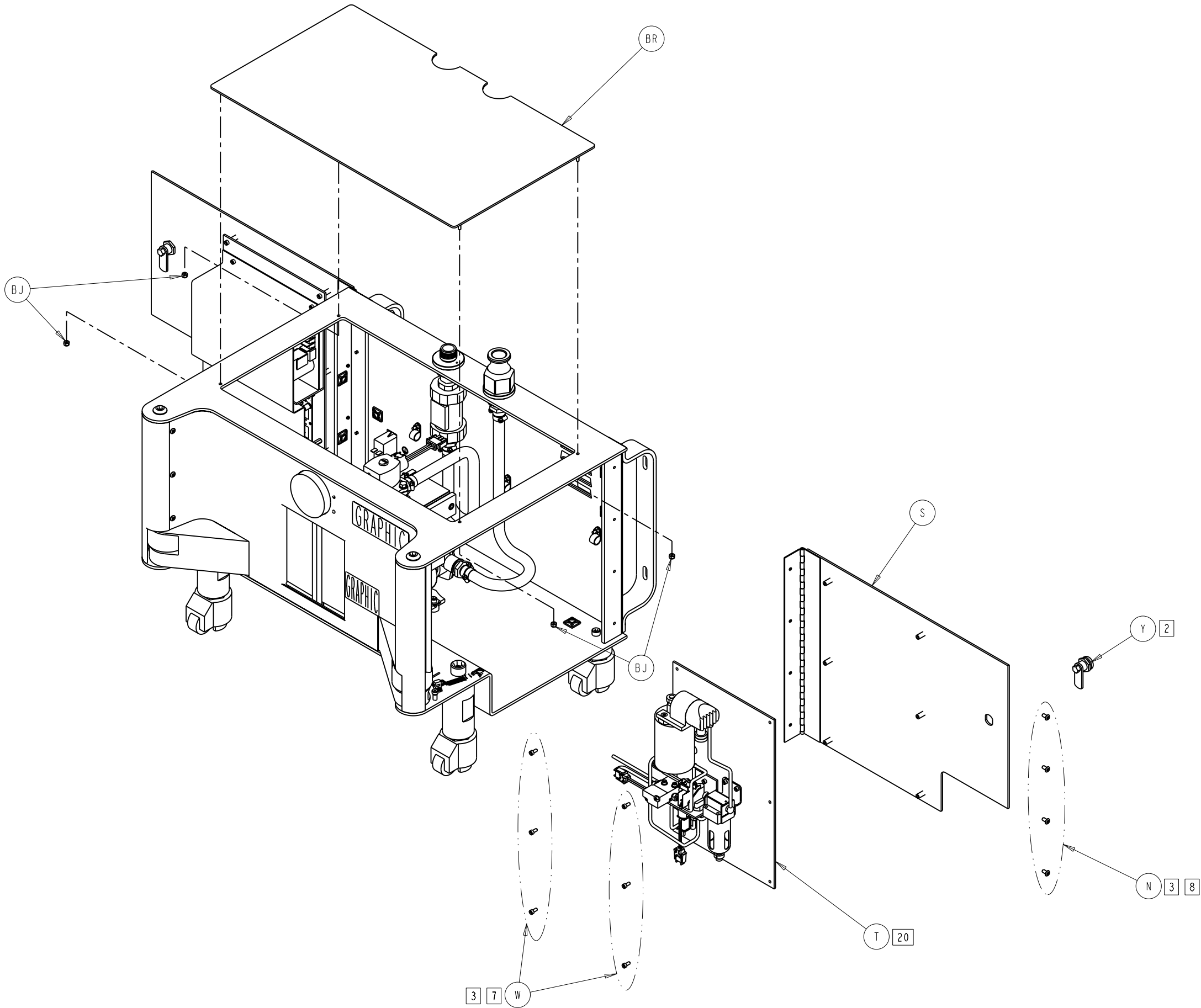


NOTES :

FORM NO. 19im009, Rev. NONE	SHEET 3 OF 7
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 1-8 03	TITLE NEPTUNE DOCKER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-904-010	REV. NONE
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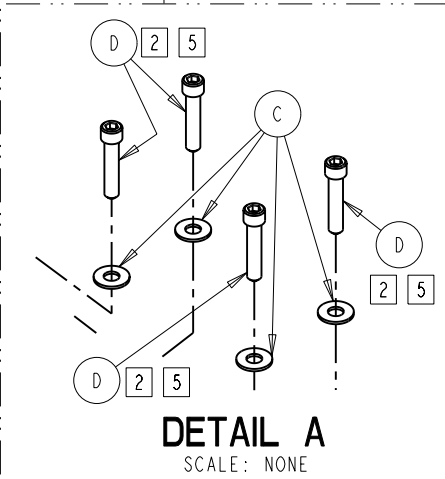
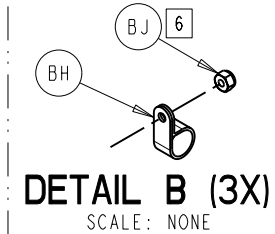
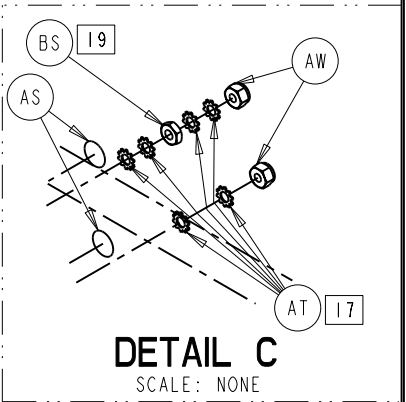
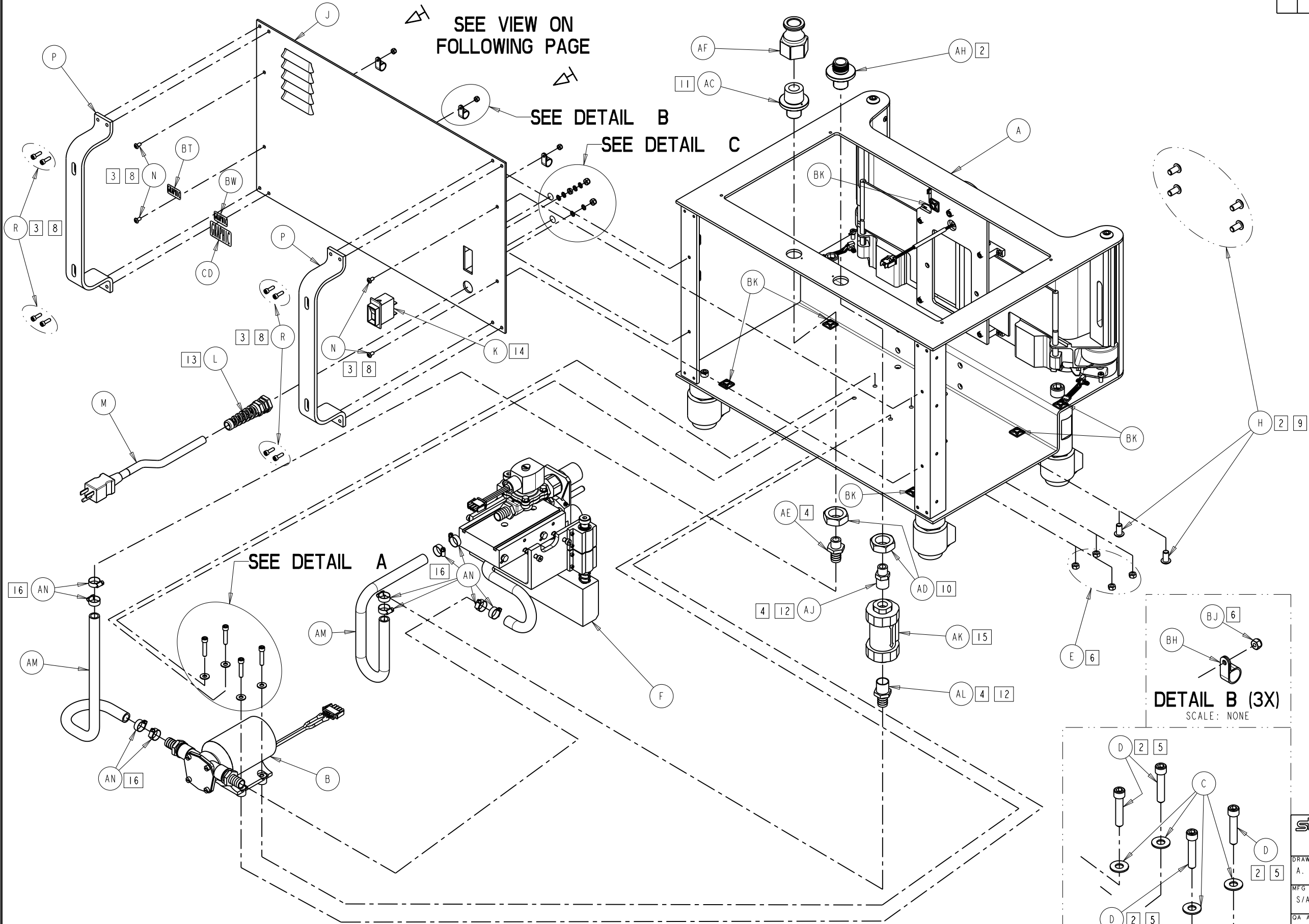


NOTES:

FORM NO. 19im009, Rev. NONE	SHEET 4 OF 7
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<div> <div> <div>stryker</div> <div>INSTRUMENTS</div> <div>4100 E. MILHAM KALAMAZOO, MI. 49001</div> </div> </div>			
DRAWN BY A. GREENHALGH	DATE 1-8 03	TITLE NEPTUNE DOCKER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-904-010	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT-MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			

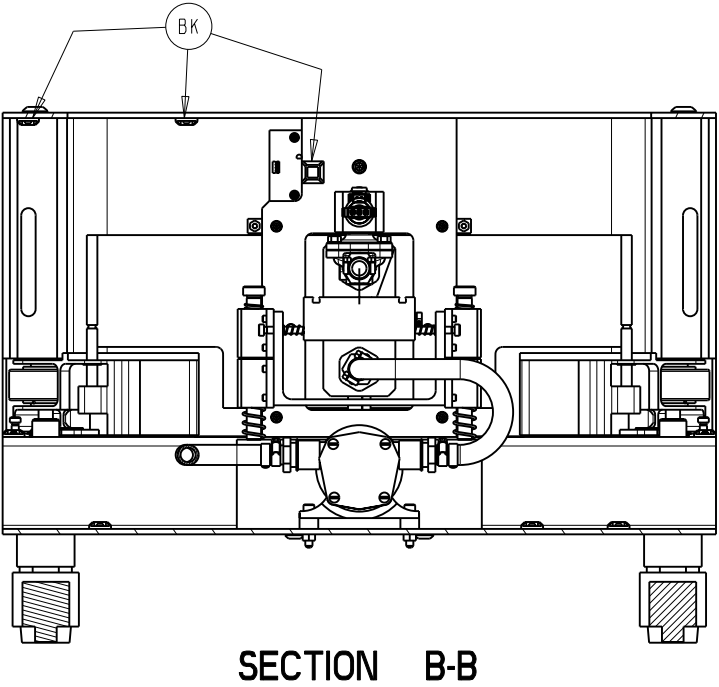
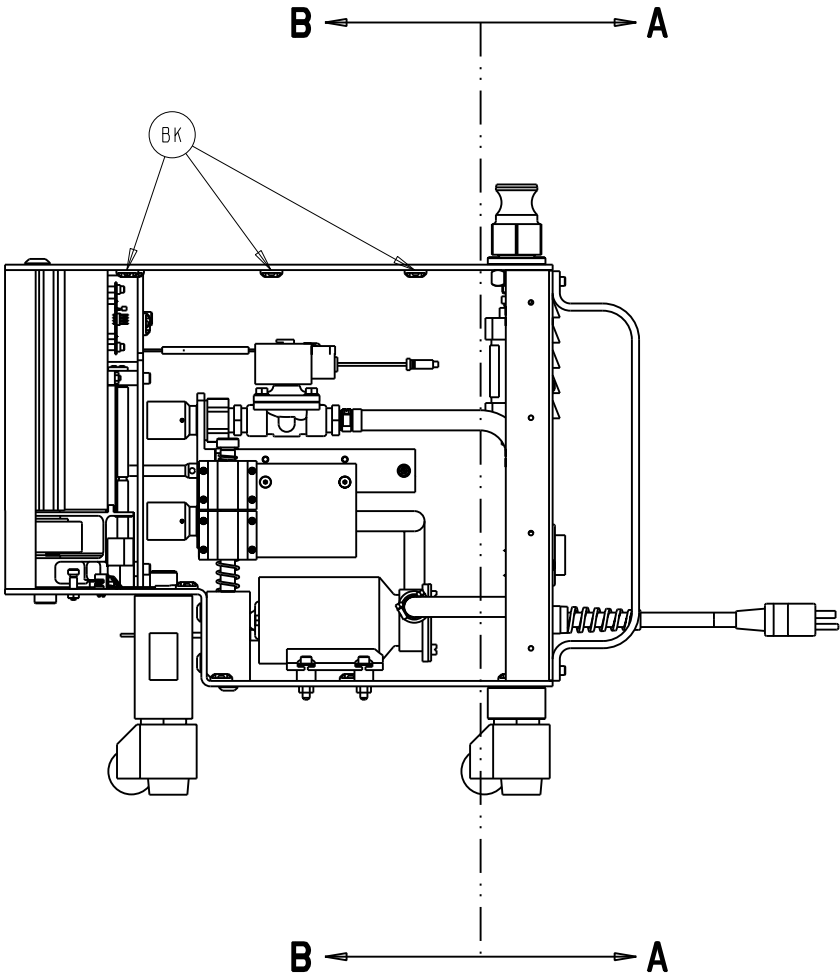
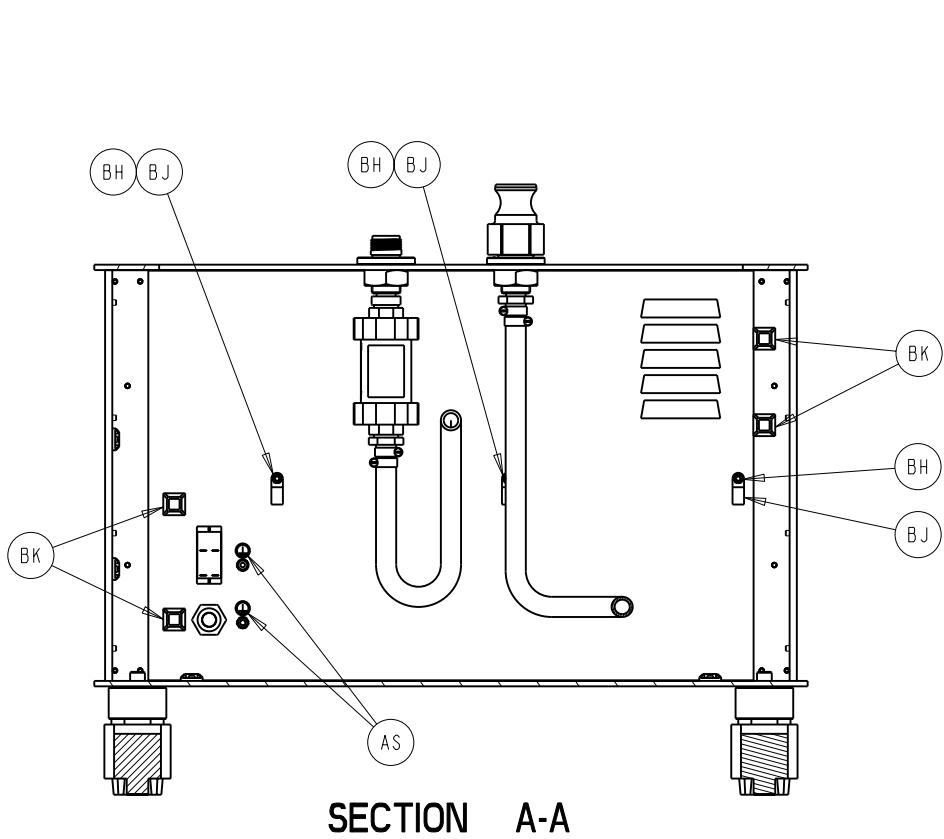
DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



NOTES:

FORM NO. 19fm009, Rev. NONE		SHEET 5 OF 7	
<div>stryker</div> <div>INSTRUMENTS</div> <div>4100 E. MILHAM KALAMAZOO, MI. 49001</div>			
DRAWN BY A. GREENHALGH	DATE 1-8 03	TITLE NEPTUNE DOCKER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-904-010	REV. NONE
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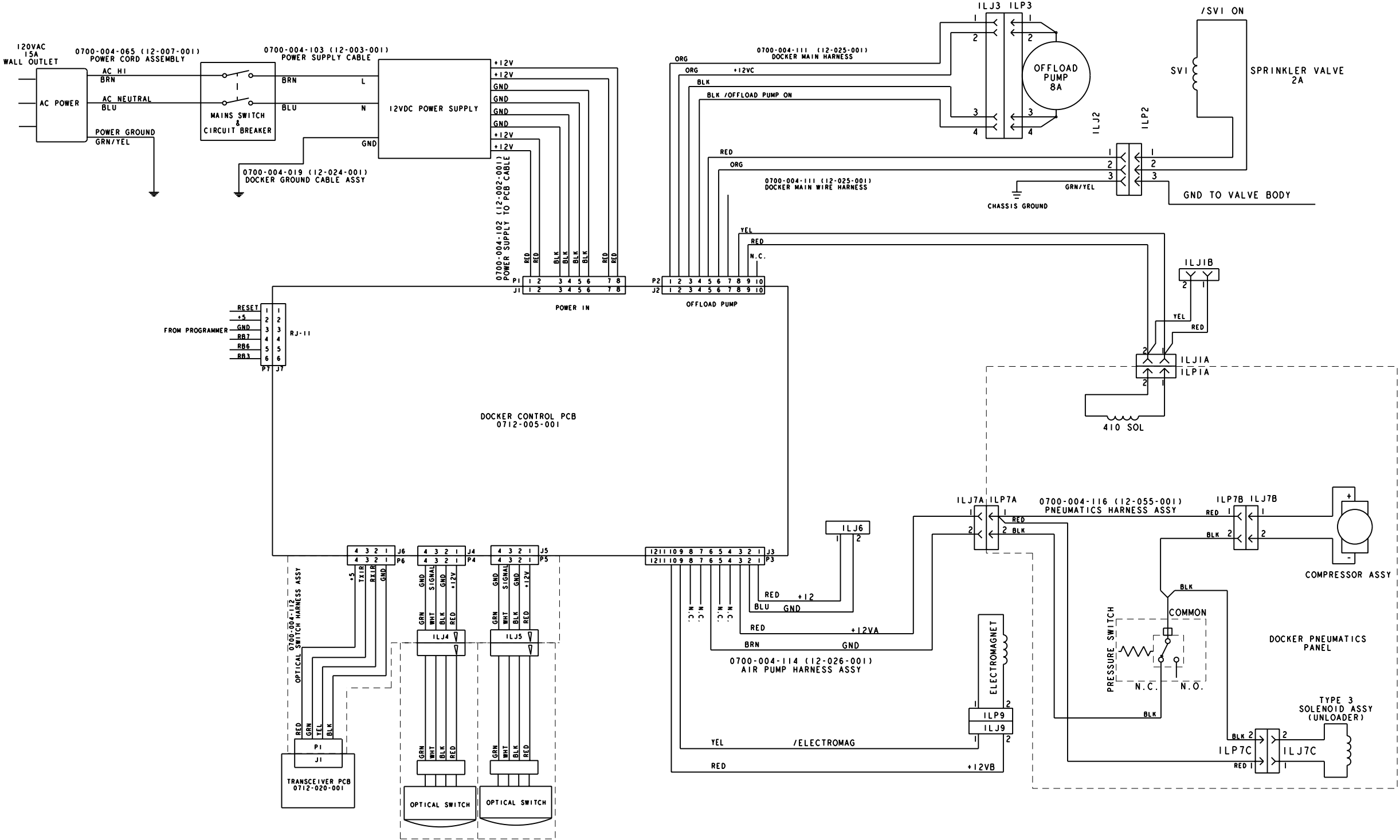


NOTES :

FORM NO. 191m009, Rev. NONE	SHEET 6 OF 7
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 1-8 03	TITLE NEPTUNE DOCKER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-904-010	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			

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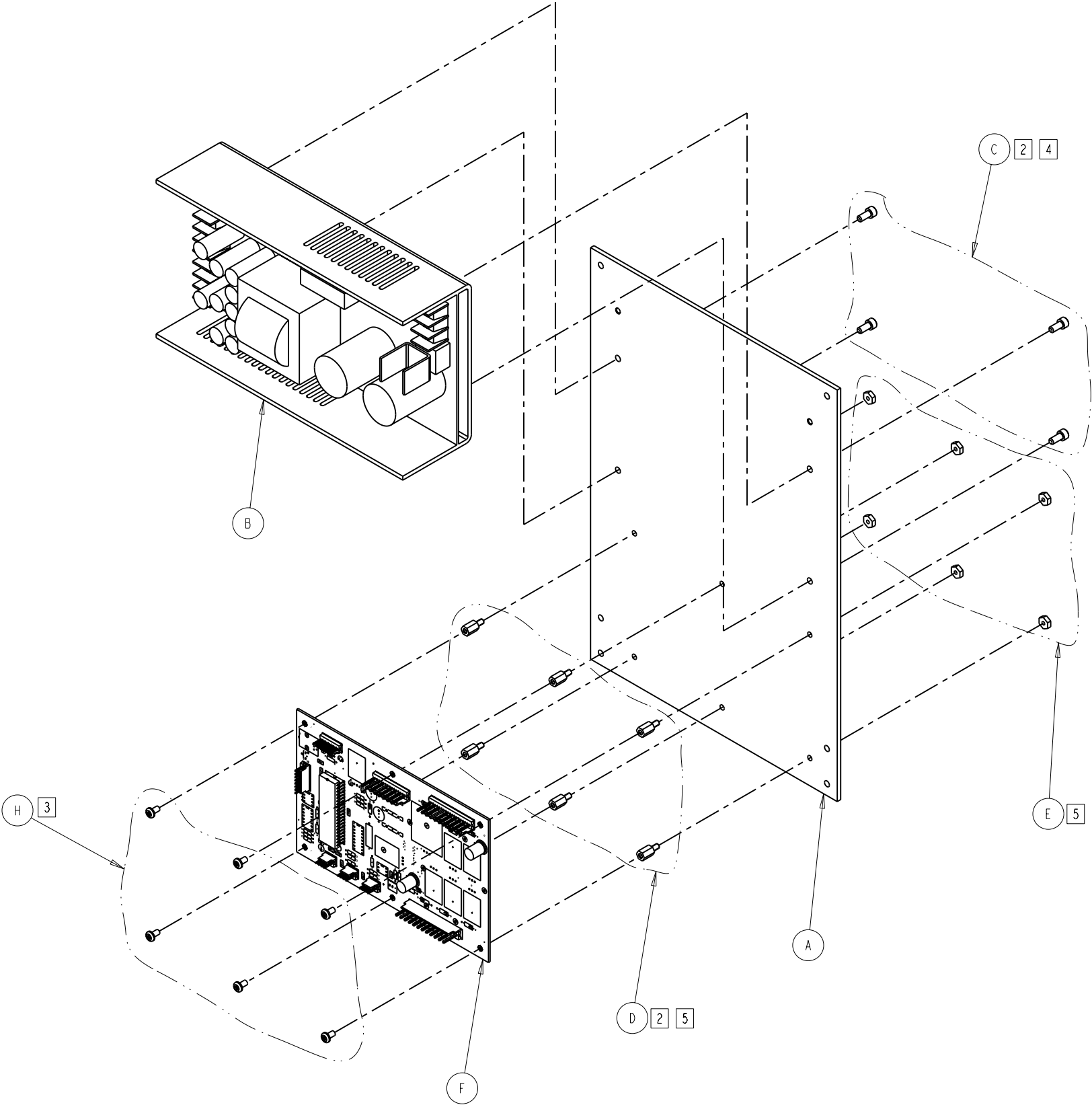
NOTES:

FORM NO. 191m009, Rev. NONE	SHEET 7 OF 7
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stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH	DATE 1-8 03	TITLE NEPTUNE DOCKER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-904-010	REV. NONE
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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

Item	Part No.	Part Name	Qty.
A	0700-004-021	POWER SUPPLY PLATE	1
B	0700-004-022	POWER SUPPLY	1
C	0004-525-000	SHCS 8-32 X 3/8	4
D	0052-505-000	STANDOFF ALUMINUM 6-32 X 3/8	6
E	0015-001-000	HEX NUT 6-32	6
F	0712-005-001	PCB ASSY, CONTROLLER, LOWER, DOCKER	1
H	0050-038-000	PAN HEAD SCREW 6-32 X 1/4	6
J	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR



- 5 TORQUE TO 6 IN-LBS.
- 4 TORQUE TO 25 IN-LBS.
- 3 TORQUE TO 10 IN-LBS.
- 2 APPLY LOCTITE 222 TO SECURE.
1. APPLIES TO DOCKER MODELS 700-4 AND 700-5.

NOTES:

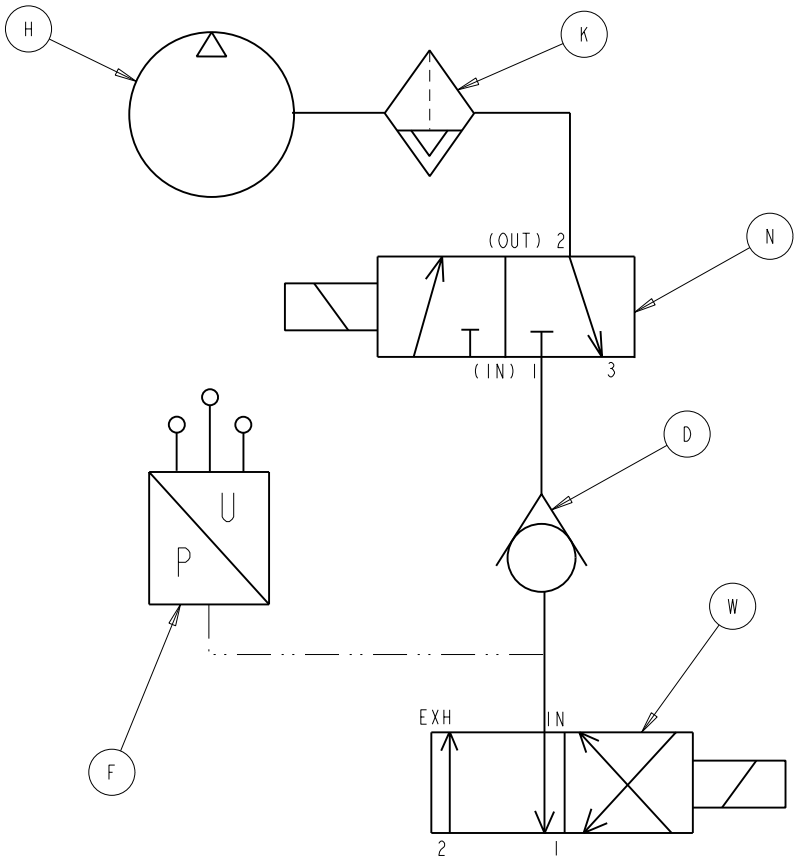
FORM NO. 191m009, Rev. NONE	SHEET 1 OF 1
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stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH	DATE 12-16 02	TITLE POWER SUPPLY PANEL ASSEMBLY	
MFG APPROVAL S/ A. BEVERAGE	DATE 1-03		
QA APPROVAL S/ S. HORVATH	DATE 1-03		
		PART NO. 0700-904-020	REV. NONE

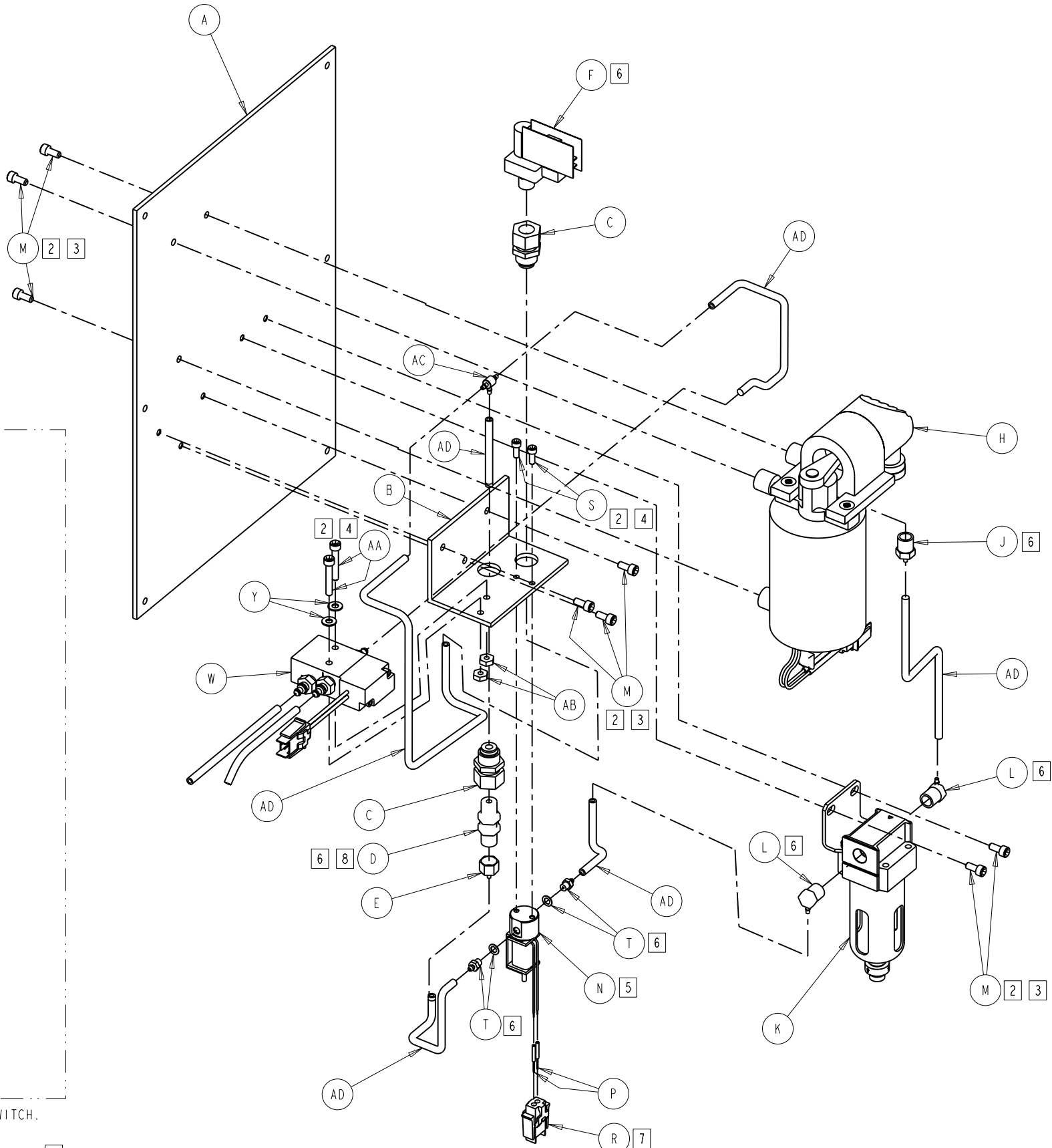
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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

Item	Part No.	Part Name	Qty.
A	0700-004-051	PNEUMATICS PLATE	1
B	0700-004-052	COMPRESSOR REGULATOR BRACKET	1
C	0048-192-000	BULKHEAD FITTING	2
D	0061-006-000	CHECK BALL VALVE 1/8	1
E	0048-206-000	BARBED FITTING .096 TUBE X 1/8	1
F	0700-004-053	PRESSURE SWITCH	1
H	0700-004-055	PNEUMATIC COMPRESSOR ASSEMBLY	1
J	0048-195-000	BARBED FITTING 1/8 NPT	1
K	0700-004-059	PNEUMATIC FILTER	1
L	0048-193-000	PNEUMATIC ELBOW FITTING	2
M	0004-525-000	SHCS 8-32 X 3/8	8
N	0700-004-056	PNEUMATIC TYPE 3 SOLENOID	1
P	0034-418-000	CRIMP CONTACT 26-24 AWG	2
R	0034-411-000	2 CONDUCTOR PIN HOUSING CONNECTOR	1
S	0004-529-000	SHCS 6-32 X 3/8	2
T	0048-194-000	PNEUMATIC BARBED FITTING 10-32	2
W	0700-005-105	PNEUMATIC VALVE ASSEMBLY	1
Y	0011-510-000	FLAT WASHER	2
AA	0004-533-000	SHCS 8-32 X 1.00	2
AB	0015-002-000	HEX NUT 8-32	2
AC	0048-185-000	PNEUMATIC TEE FITTING	1
AD	0060-008-000	PNEUMATIC TUBING	84 IN
AE	0044-021-000	TEFLON TAPE, 1/4" (NOT SHOWN)	48 IN
AF	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR



PNEUMATIC SCHEMATIC
SCALE: NONE



NOTES:

1. APPLIES TO DOCKER MODELS 700-4 ONLY.

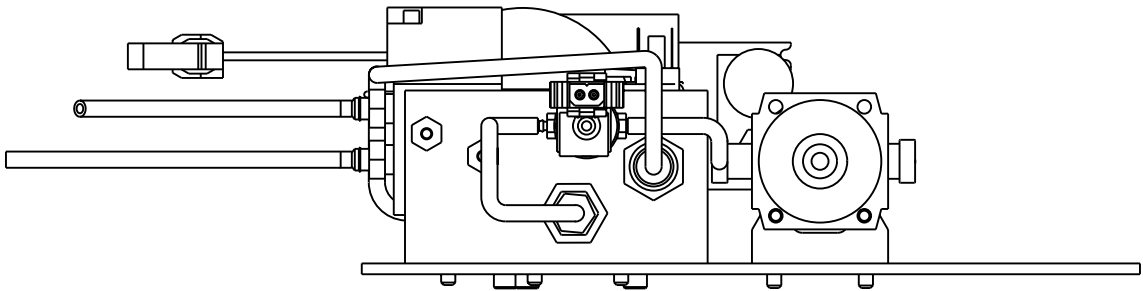
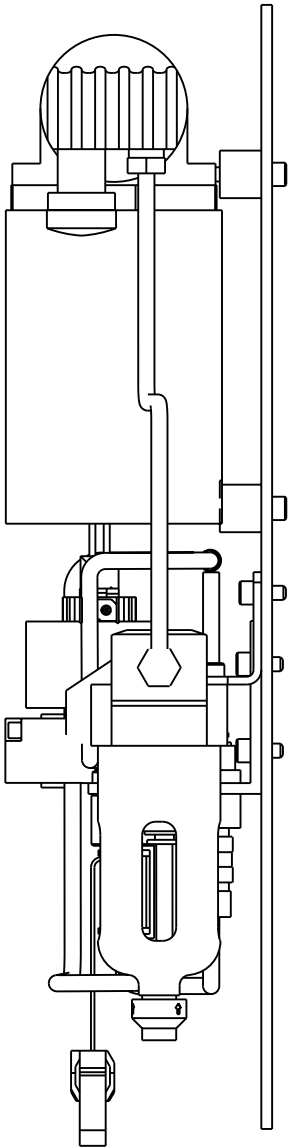
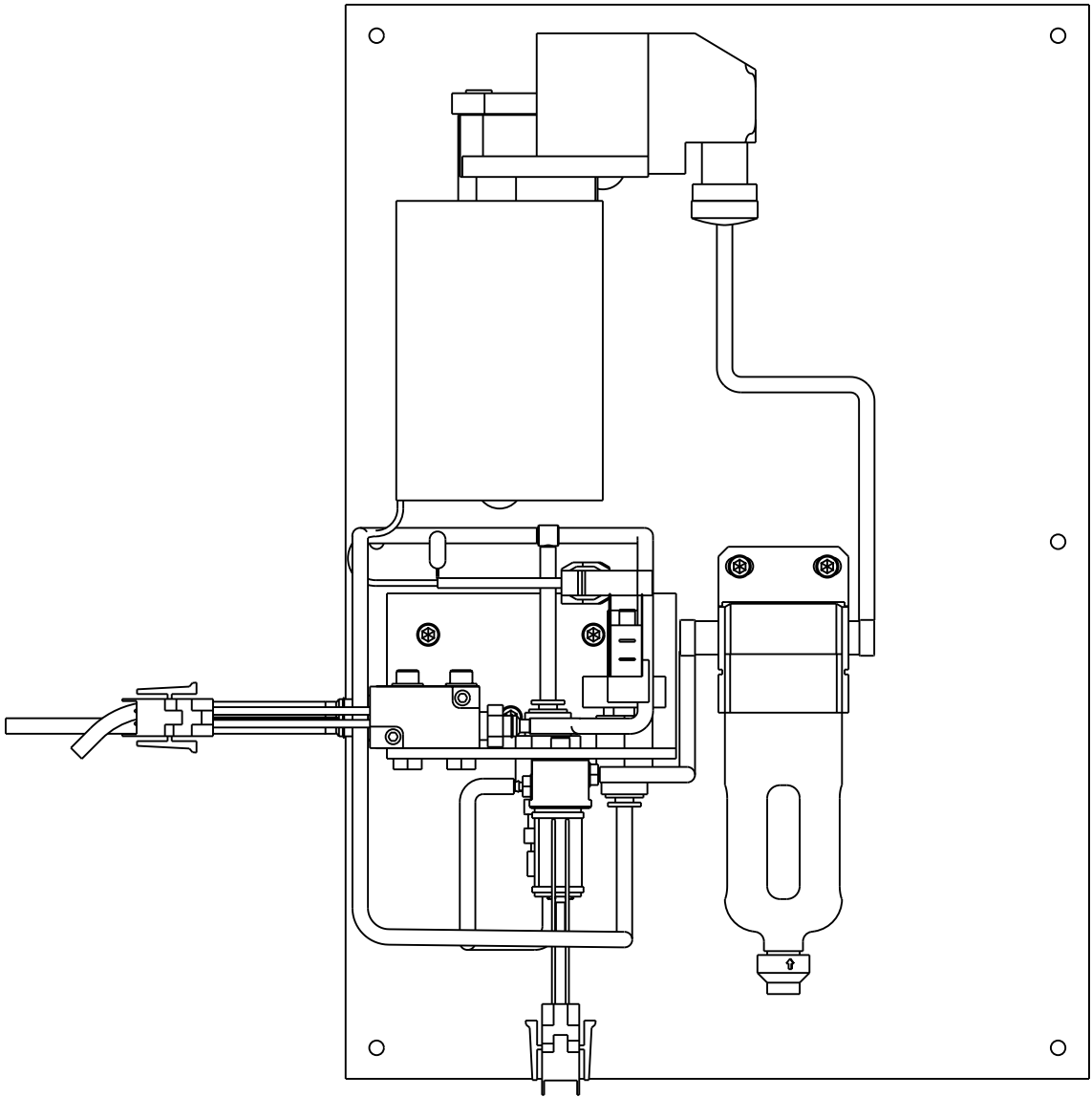
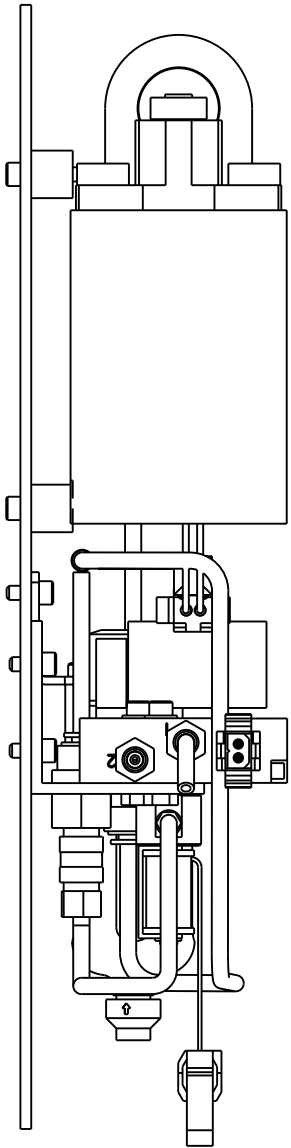
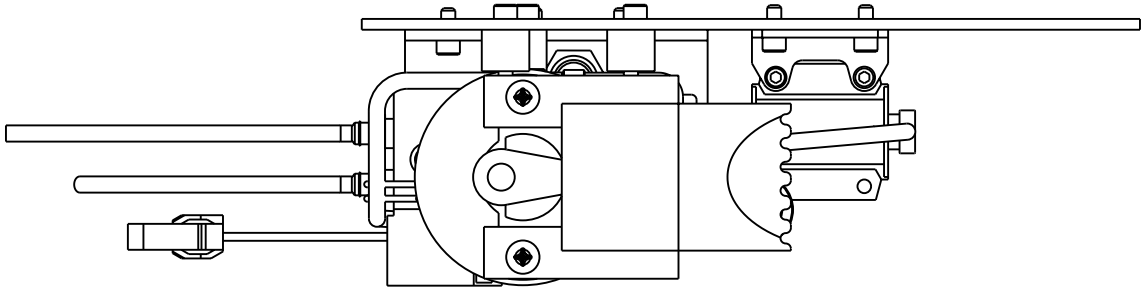
- 5 THE OUT PORT OF THE SOLENOID MUST POINT TOWARDS THE PRESSURE SWITCH.
- 4 TORQUE TO 17 IN-LBS.
- 3 TORQUE TO 25 IN-LBS.
- 2 APPLY LOCTITE 222.

- 8 ARROW ON CHECK BALL VALVE MUST POINT TOWARDS BULKHEAD FITTING 0048-192-000.
- 7 WIRE POSITION IN CONNECTOR IS REVERSIBLE.
- 6 APPLY TEFLON TAPE CLOCKWISE TO THREADS.

FORM NO. 191m009, Rev. NONE
SHEET 1 OF 2

stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE PNEUMATICS PANEL ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 2-03		
QA APPROVAL S/S. HORVATH	DATE 2-03	PART NO. 0700-904-050	REV. NONE
THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.			

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

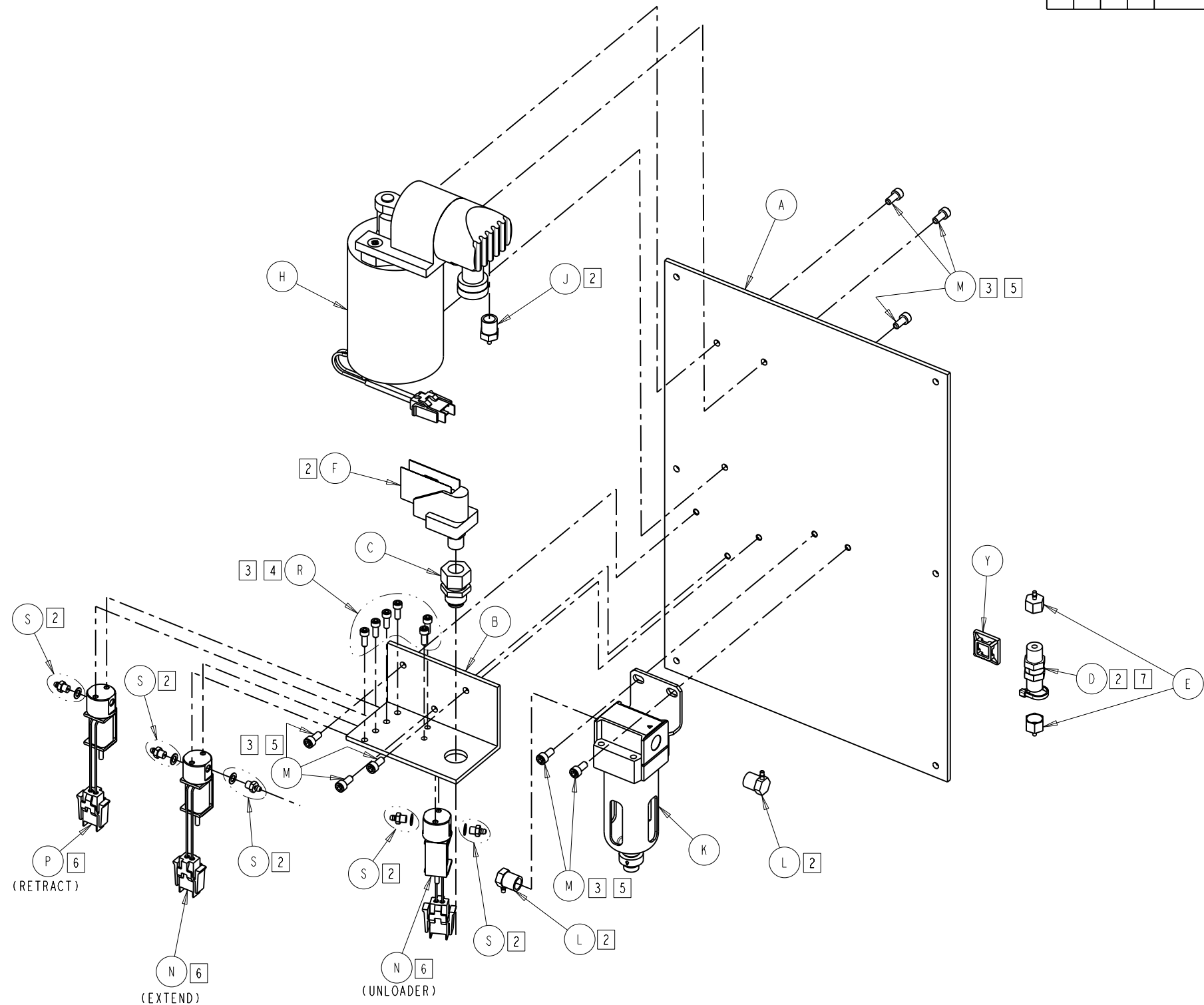
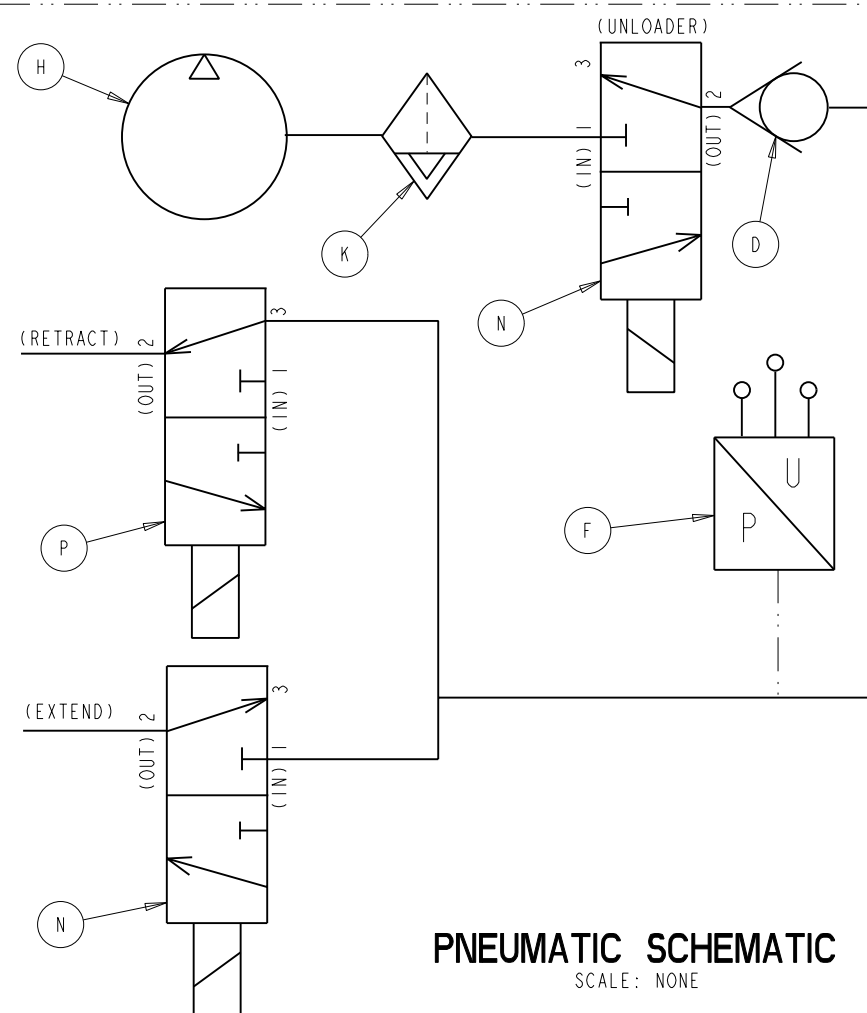


NOTES :

FORM NO. 19im009, Rev. NONE	SHEET 2 OF 2
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stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE PNEUMATICS PANEL ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03		
		PART NO. 0700-904-050	REV. NONE
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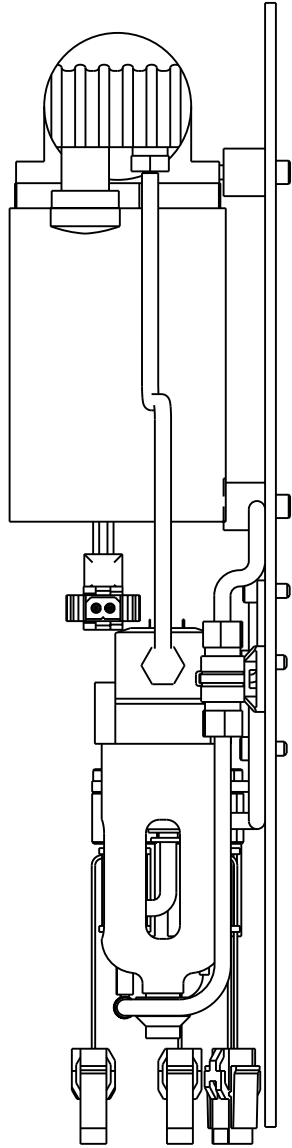
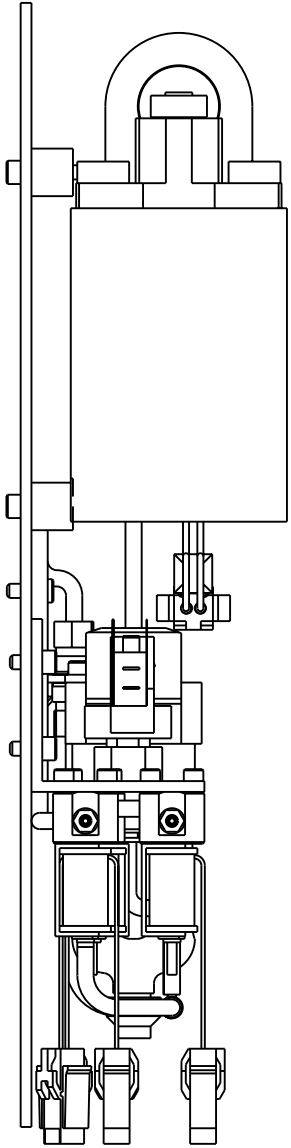
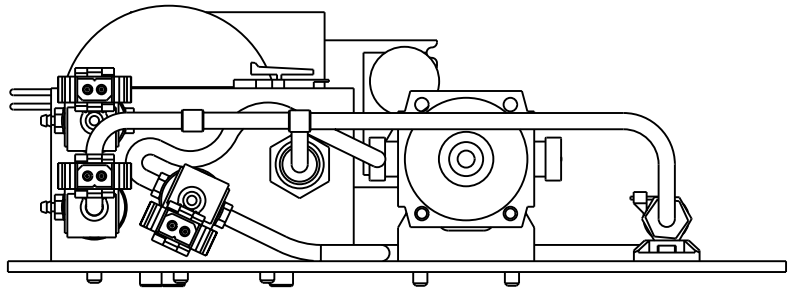
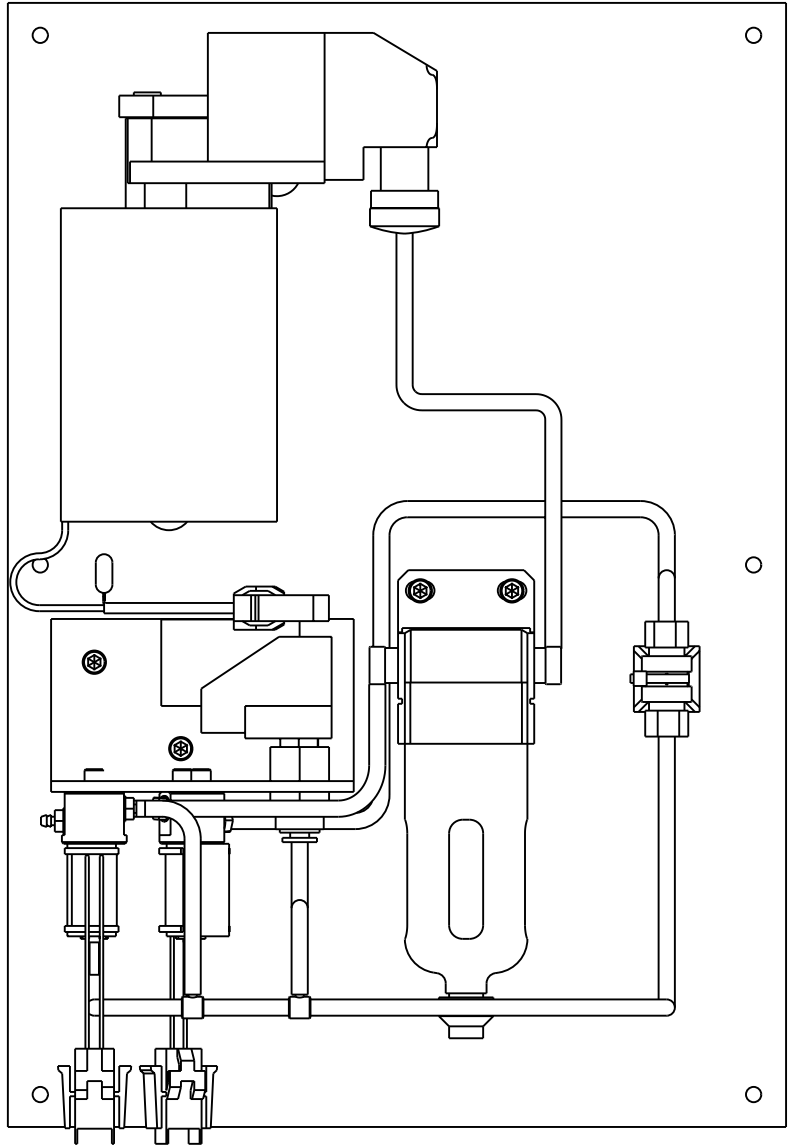
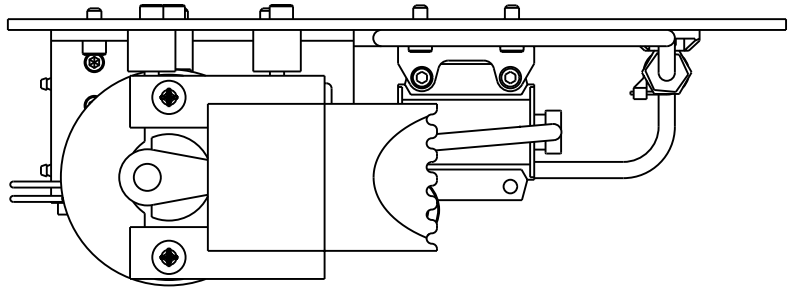
- 7 ARROW ON CHECK BALL VALVE MUST POINT TOWARDS BULKHEAD FITTING 0048-192-000.
- 6 WIRE POSITION IN CONNECTOR IS REVERSIBLE.
- 5 TORQUE TO 25 IN-LBS.
- 4 TORQUE TO 17 IN-LBS.
- 3 APPLY LOCTITE 222.
- 2 APPLY TEFLON TAPE CLOCKWISE TO THREADS.

NOTES:

1. APPLIES TO DOCKER MODELS 700-4.

 STRYKER INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001		FORM NO. _____ 19fm009, Rev. NONE		SHEET 1 OF 2			
		DRAWN BY G. HEILMAN MFG APPROVAL S/A. BEVERAGE QA APPROVAL S/S. HORVATH		DATE 1-03 DATE 2-03 DATE 2-03		TITLE PNEUMATICS PANEL PART NO. 0700-904-051	
THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT-MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.							

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



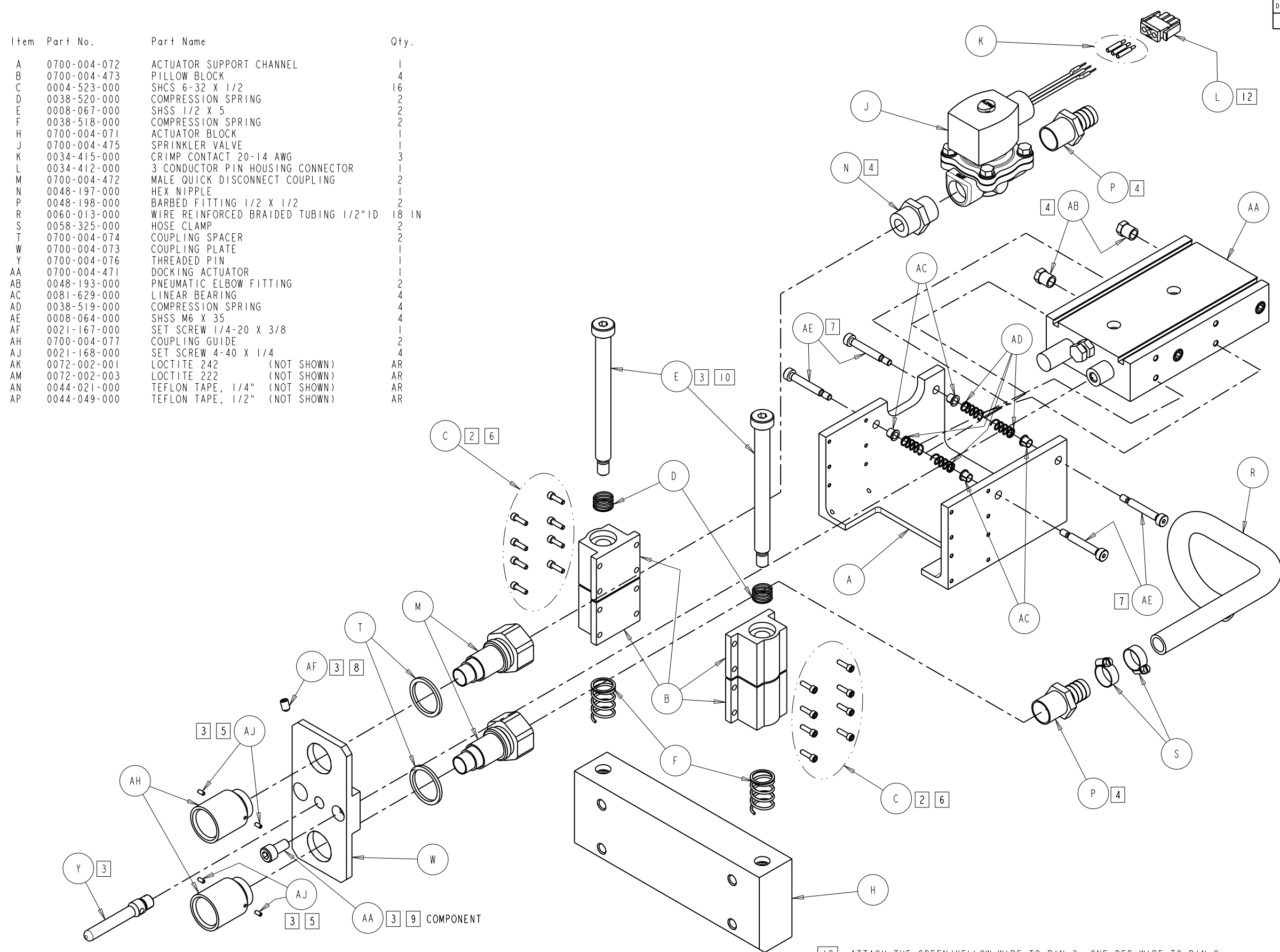
NOTES :

FORM NO. 19im009, Rev. NONE	SHEET 2 OF 2
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stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY G. HEILMAN	DATE 1-03	PNEUMATICS PANEL	
MFG APPROVAL	DATE		
S/A. BEVERAGE	2-03		
QA APPROVAL	DATE	PART NO. 0700-904-051	REV. NONE
S/S. HORVATH	2-03		
THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT-MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.			

Item	Part No.	Part Name	Qty.
A	0700-004-072	ACTUATOR SUPPORT CHANNEL	1
B	0700-004-473	PILLOW BLOCK	4
C	0004-523-000	SHCS 6-32 X 1/2	16
D	0038-520-000	COMPRESSION SPRING	2
E	0008-067-000	SHSS 1/2 X 5	2
F	0038-518-000	COMPRESSION SPRING	2
H	0700-004-071	ACTUATOR BLOCK	1
J	0700-004-475	SPRINKLER VALVE	1
K	0034-415-000	CRIMP CONTACT 20-14 AWG	3
L	0034-412-000	3 CONDUCTOR PIN HOUSING CONNECTOR	1
M	0700-004-472	MALE QUICK DISCONNECT COUPLING	2
N	0048-197-000	HEX NIPPLE	1
P	0048-198-000	BARBED FITTING 1/2 X 1/2	2
R	0060-013-000	WIRE REINFORCED BRAIDED TUBING 1/2"ID	18 IN
S	0058-325-000	HOSE CLAMP	2
T	0700-004-074	COUPLING SPACER	2
W	0700-004-073	COUPLING PLATE	1
Y	0700-004-076	THREADED PIN	1
AA	0700-004-471	DOCKING ACTUATOR	1
AB	0048-193-000	PNEUMATIC ELBOW FITTING	2
AC	0081-629-000	LINEAR BEARING	4
AD	0038-519-000	COMPRESSION SPRING	4
AE	0008-064-000	SHSS M6 X 35	4
AF	0021-167-000	SET SCREW 1/4-20 X 3/8	1
AH	0700-004-077	COUPLING GUIDE	2
AJ	0021-168-000	SET SCREW 4-40 X 1/4	4
AK	0072-002-001	LOCTITE 242 (NOT SHOWN)	AR
AM	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR
AN	0044-021-000	TEFLON TAPE, 1/4" (NOT SHOWN)	AR
AP	0044-049-000	TEFLON TAPE, 1/2" (NOT SHOWN)	AR

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



- NOTES:
- APPLIES TO DOCKER MODEL 700-4.
 - APPLY LOCTITE 222.
 - APPLY LOCTITE 242.
 - APPLY TEFLON TAPE CLOCKWISE.
 - TORQUE TO 3 IN-LBS.
 - TORQUE TO 11 IN-LBS.

- TORQUE TO 100 IN-LBS.
- TORQUE TO 40 IN-LBS.
- TORQUE TO 30 IN-LBS.

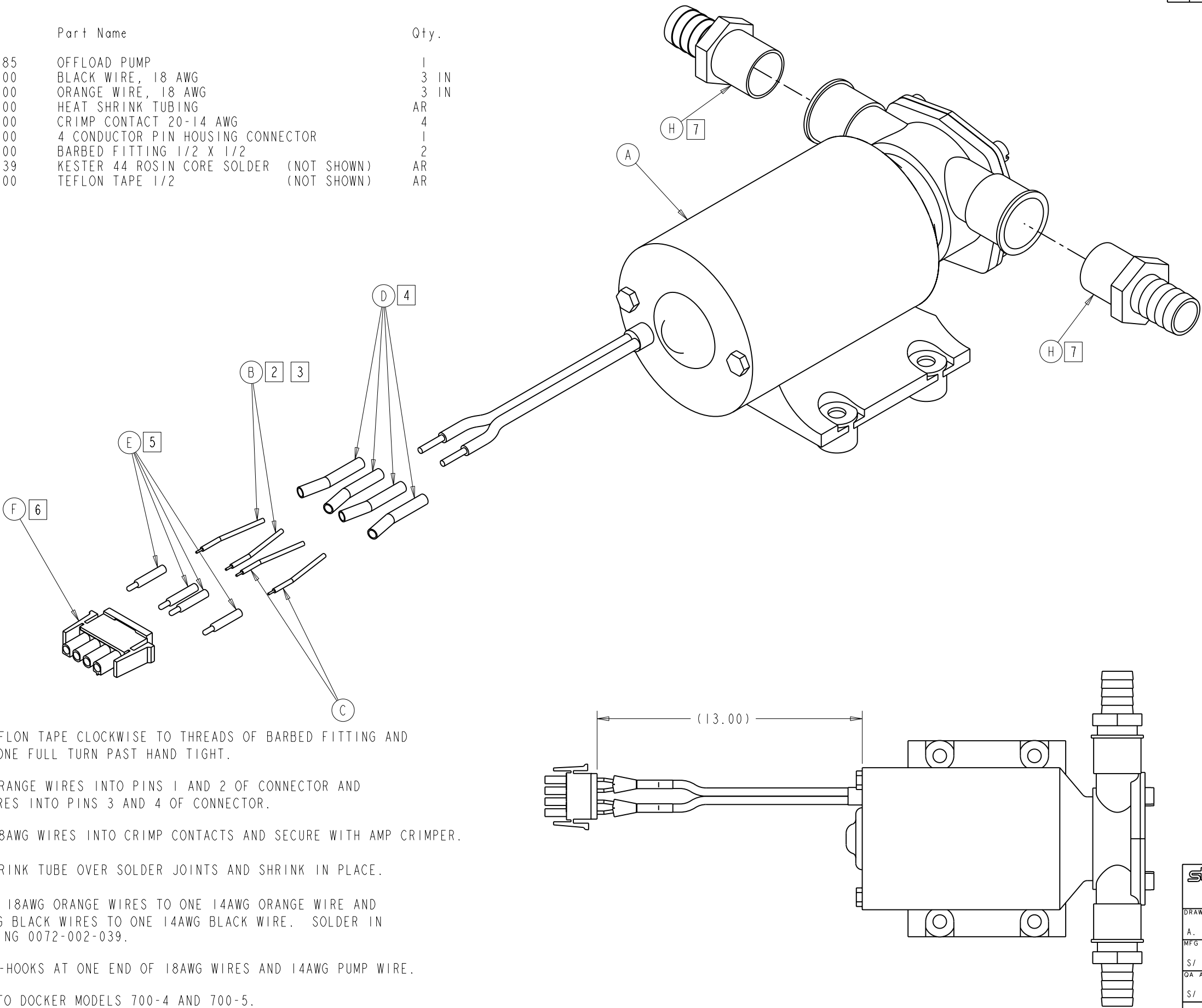
- ATTACH THE GREEN/YELLOW WIRE TO PIN 3, ONE RED WIRE TO PIN 2 AND THE OTHER RED WIRE TO PIN 1.
- STAGGER HOSE CLAMPS SO SCREWS ARE NOT LINED UP WITH EACH OTHER.
- TORQUE TO 240 IN-LBS.

FORM NO. 191m009, Rev. NONE	SHEET 1 OF 1
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE ACTUATOR ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-904-070	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

Item	Part No.	Part Name	Qty.
A	0700-004-085	OFFLOAD PUMP	1
B	0039-487-000	BLACK WIRE, 18 AWG	3 IN
C	0039-488-000	ORANGE WIRE, 18 AWG	3 IN
D	0034-408-000	HEAT SHRINK TUBING	AR
E	0034-415-000	CRIMP CONTACT 20-14 AWG	4
F	0034-410-000	4 CONDUCTOR PIN HOUSING CONNECTOR	1
H	0048-198-000	BARBED FITTING 1/2 X 1/2	2
J	0072-002-039	KESTER 44 ROSIN CORE SOLDER (NOT SHOWN)	AR
K	0044-049-000	TEFLON TAPE 1/2 (NOT SHOWN)	AR



- 7 APPLY TEFLON TAPE CLOCKWISE TO THREADS OF BARBED FITTING AND TIGHTEN ONE FULL TURN PAST HAND TIGHT.
- 6 INSERT ORANGE WIRES INTO PINS 1 AND 2 OF CONNECTOR AND BLACK WIRES INTO PINS 3 AND 4 OF CONNECTOR.
- 5 INSERT 18AWG WIRES INTO CRIMP CONTACTS AND SECURE WITH AMP CRIMPER.
- 4 SLIDE SHRINK TUBE OVER SOLDER JOINTS AND SHRINK IN PLACE.
- 3 HOOK TWO 18AWG ORANGE WIRES TO ONE 14AWG ORANGE WIRE AND TWO 18AWG BLACK WIRES TO ONE 14AWG BLACK WIRE. SOLDER IN PLACE USING 0072-002-039.
- 2 CREATE J-HOOKS AT ONE END OF 18AWG WIRES AND 14AWG PUMP WIRE.

1. APPLIES TO DOCKER MODELS 700-4 AND 700-5.

NOTES:

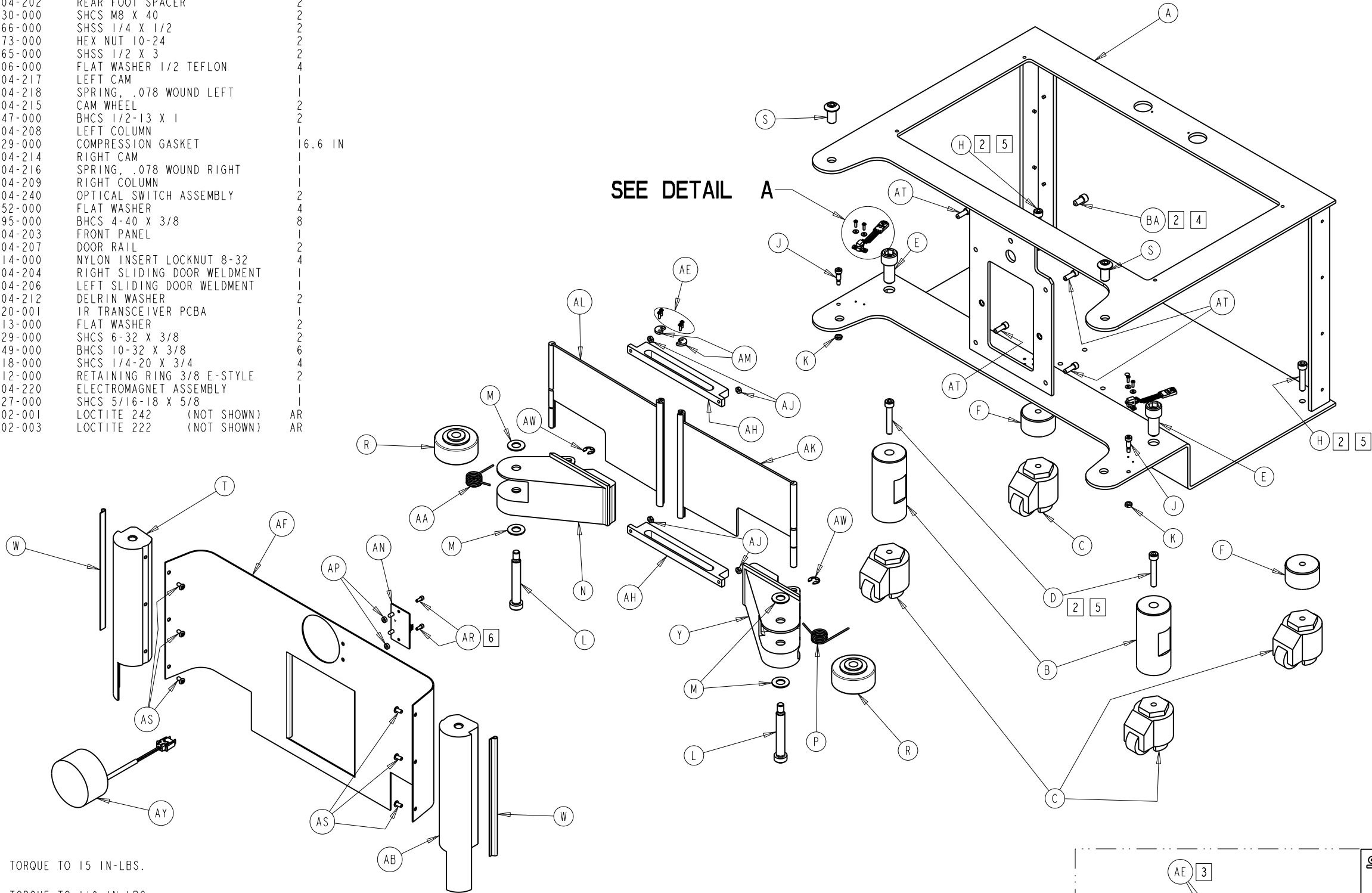
FORM NO. 191m009, Rev. NONE	SHEET 1 OF 1
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stryker INSTRUMENTS 4100 E. MILHAM KALAMAZOO, MI. 49001			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE OFFLOAD PUMP ASSEMBLY	
MFG APPROVAL S/ A. BEVERAGE	DATE 1-03		
QA APPROVAL S/ S. HORVATH	DATE 1-03	PART NO. 0700-904-080	REV. NONE

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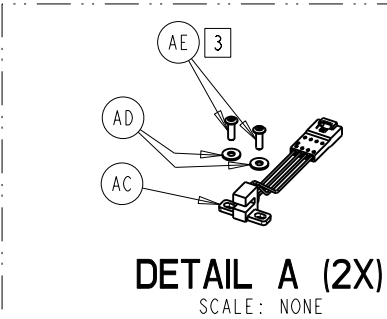
DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

Item	Part No.	Part Name	Qty.
A	0700-004-205	FRAME WELDMENT	1
B	0700-004-201	FRONT FOOT SPACER	2
C	0700-004-211	SWIVEL CASTER WITH LEVELING	4
D	0004-528-000	SHCS M8 X 50	2
E	0004-524-000	SHCS 5/8-11 X 1-1/2	2
F	0700-004-202	REAR FOOT SPACER	2
H	0004-530-000	SHCS M8 X 40	2
J	0008-066-000	SHSS 1/4 X 1/2	2
K	0015-073-000	HEX NUT 10-24	2
L	0008-065-000	SHSS 1/2 X 3	2
M	0014-106-000	FLAT WASHER 1/2 TEFLON	4
N	0700-004-217	LEFT CAM	1
P	0700-004-218	SPRING, .078 WOUND LEFT	1
R	0700-004-215	CAM WHEEL	2
S	0004-547-000	BHCS 1/2-13 X 1	2
T	0700-004-208	LEFT COLUMN	1
W	0058-329-000	COMPRESSION GASKET	16.6 IN
Y	0700-004-214	RIGHT CAM	1
AA	0700-004-216	SPRING, .078 WOUND RIGHT	1
AB	0700-004-209	RIGHT COLUMN	1
AC	0700-004-240	OPTICAL SWITCH ASSEMBLY	2
AD	0011-052-000	FLAT WASHER	4
AE	0004-295-000	BHCS 4-40 X 3/8	8
AF	0700-004-203	FRONT PANEL	1
AH	0700-004-207	DOOR RAIL	2
AJ	0016-014-000	NYLON INSERT LOCKNUT 8-32	4
AK	0700-004-204	RIGHT SLIDING DOOR WELDMENT	1
AL	0700-004-206	LEFT SLIDING DOOR WELDMENT	1
AM	0700-004-212	DELTRIN WASHER	2
AN	0712-020-001	IR TRANSCIEIVER PCBA	1
AP	0011-513-000	FLAT WASHER	2
AR	0004-529-000	SHCS 6-32 X 3/8	2
AS	0004-549-000	BHCS 10-32 X 3/8	6
AT	0004-518-000	SHCS 1/4-20 X 3/4	4
AW	0028-312-000	RETAINING RING 3/8 E-STYLE	2
AY	0700-004-220	ELECTROMAGNET ASSEMBLY	1
BA	0004-527-000	SHCS 5/16-18 X 5/8	1
BB	0072-002-001	LOCTITE 242 (NOT SHOWN)	AR
BC	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR



- [6] TORQUE TO 15 IN-LBS.
- [5] TORQUE TO 110 IN-LBS.
- [4] TORQUE TO 75 IN-LBS.
- [3] TORQUE TO 3 IN-LBS.
- [2] APPLY LOCTITE 242.

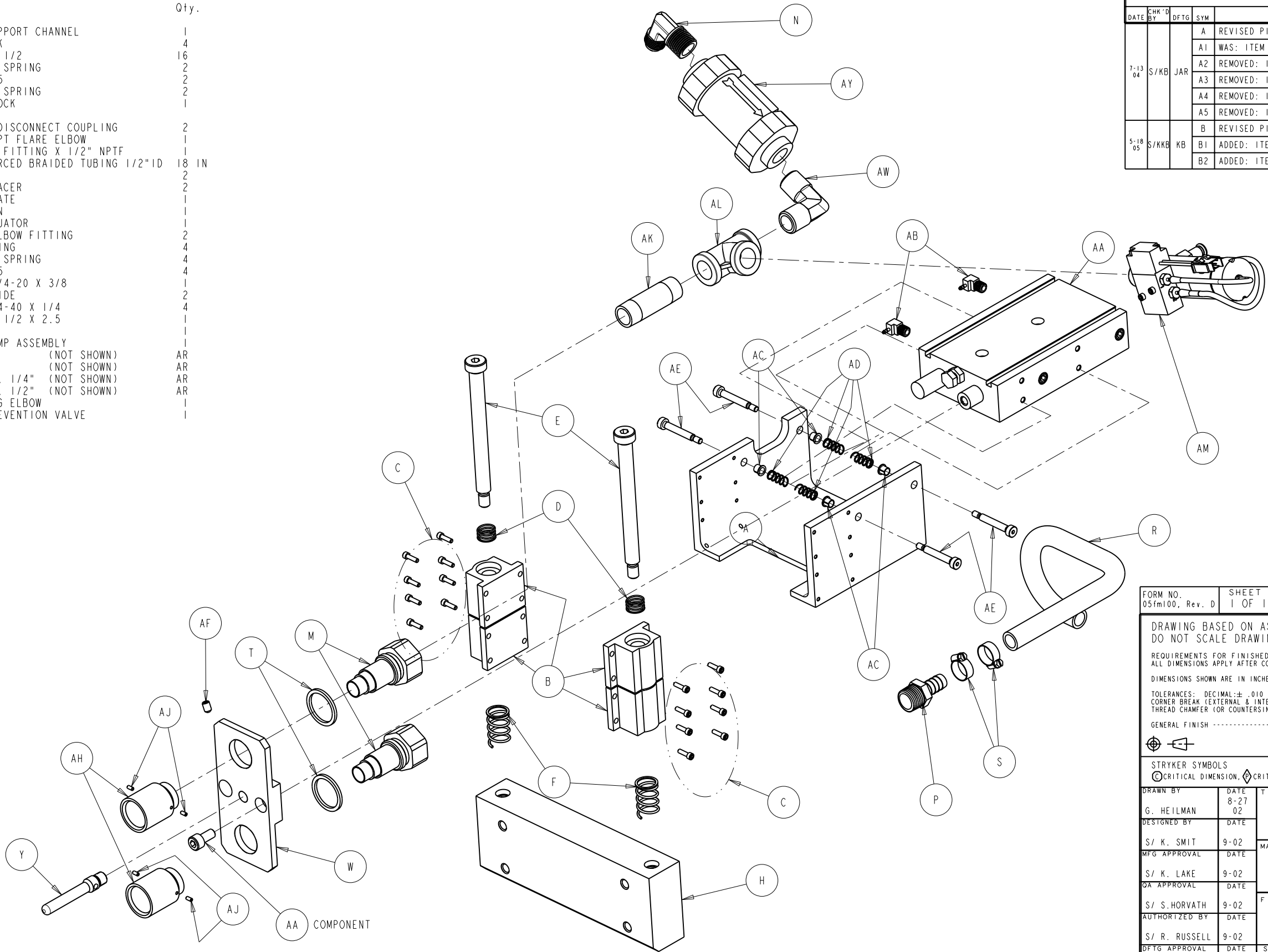
NOTES: 1. APPLIES TO DOCKER MODELS 700-4 AND 700-5.



FORM NO. 191m009, Rev. NONE	SHEET 1 OF 1
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-13 02	TITLE CHASSIS ASSEMBLY	
MFG APPROVAL S/ A. BEVERAGE	DATE 1-03		
QA APPROVAL S/ S. HORVATH	DATE 1-03	PART NO. 0700-904-210	REV. NONE
<small>THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS ISSUED IN CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS OR USED IN THE MANUFACTURE OF THE SUBJECT-MATTER THEREOF WITHOUT THE WRITTEN CONSENT OF STRYKER CORPORATION.</small>			

Item	Part No.	Part Name	Qty.
A	0700-004-072	ACTUATOR SUPPORT CHANNEL	1
B	0700-004-473	PILLOW BLOCK	4
C	0004-523-000	SHCS 6-32 X 1/2	16
D	0038-520-000	COMPRESSION SPRING	2
E	0008-067-000	SHSS 1/2 X 5	2
F	0038-518-000	COMPRESSION SPRING	2
H	0700-004-071	ACTUATOR BLOCK	1
M	0700-004-472	MALE QUICK DISCONNECT COUPLING	2
N	0700-005-121	MALE 1/2" NPT FLARE ELBOW	1
P	0048-227-000	1/2" BARBED FITTING X 1/2" NPTF	1
R	0060-013-000	WIRE REINFORCED BRAIDED TUBING 1/2"ID	18 IN
S	0058-325-000	HOSE CLAMP	2
T	0700-004-074	COUPLING SPACER	2
W	0700-004-073	COUPLING PLATE	1
Y	0700-004-076	THREADED PIN	1
AA	0700-004-471	DOCKING ACTUATOR	1
AB	0048-193-000	PNEUMATIC ELBOW FITTING	2
AC	0081-629-000	LINEAR BEARING	4
AD	0038-519-000	COMPRESSION SPRING	4
AE	0008-064-000	SHSS M6 X 35	4
AF	0021-167-000	SET SCREW 1/4-20 X 3/8	1
AH	0700-004-077	COUPLING GUIDE	2
AJ	0021-168-000	SET SCREW #4-40 X 1/4	4
AK	0048-217-000	PIPE NIPPLE 1/2 X 2.5	1
AL	0048-216-000	PIPE TEE	1
AM	0700-005-100	INJECTOR PUMP ASSEMBLY	1
AP	0072-002-001	LOCTITE 242 (NOT SHOWN)	AR
AR	0072-002-003	LOCTITE 222 (NOT SHOWN)	AR
AS	0044-021-000	TEFLON TAPE, 1/4" (NOT SHOWN)	AR
AT	0044-049-000	TEFLON TAPE, 1/2" (NOT SHOWN)	AR
AW	0048-213-000	PIPE FITTING ELBOW	1
AY	0700-005-016	BACKFLOW PREVENTION VALVE	1



PRODUCTION RELEASED				DATE	9-02
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION	
7-13 04	S/KB	JAR	A	REVISED PICTORIALY	ECO 04Y2E05004
			A1	WAS: ITEM P 0048-198-000 BARBED....	
			A2	REMOVED: ITEM J 0700-004-475 SPRINKLE...	
			A3	REMOVED: ITEM K 0034-415-000 CRIMP...	
			A4	REMOVED: ITEM L 0034-412-000 3 CONDUCTOR...	
			A5	REMOVED: ITEM N 0048-197-000 HEX NIPPLE...	
5-18 05	S/KKB	KB	B	REVISED PICTORIALY	ECO 05Y2E01502
			B1	ADDED: ITEM AW 0048-213-000 PIPE FITTING...	
			B2	ADDED: ITEM AY 0700-005-016 BACKFLOW...	

FORM NO. 05fm100, Rev. D	SHEET 1 OF 1	PROJECT NO. MTR-0338	0700-005-010 NEXT ASSEMBLY
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DRAWING BASED ON ASME Y14.5M-1994 STANDARD
DO NOT SCALE DRAWING

REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED.
ALL DIMENSIONS APPLY AFTER COATING.

DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

TOLERANCES: DECIMAL:± .010 ANGULAR:± 1°
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT
THREAD CHAMFER (OR COUNTERSINK)-----1 TO 1 1/2 THREADS DEEP

GENERAL FINISH -----250 (MAX)



STRYKER SYMBOLS
⊙ CRITICAL DIMENSION, ⊕ CRITICAL PACKAGING DIMENSION

DRAWN BY G. HEILMAN	DATE 8-27 02	TITLE ACTUATOR ASSEMBLY		
DESIGNED BY S/ K. SMIT	DATE 9-02	MATERIAL		
MFG APPROVAL S/ K. LAKE	DATE 9-02			
QA APPROVAL S/ S. HORVATH	DATE 9-02	FINISH		
AUTHORIZED BY S/ R. RUSSELL	DATE 9-02			
DFTG APPROVAL S/ D. MORRIS	DATE 9-02	SIZE B	PART NO. 0700-005-070	REV. B

stryker
INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

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CONFIDENCE ON THE CONDITIONS THAT IT BE RETURNED ON DEMAND AND
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MANUFACTURE OF THE SUBJECT MATTER THEREOF WITHOUT THE WRITTEN
CONSENT OF STRYKER CORPORATION.

2. ASSEMBLE PER SOE-121-039.

1. PRINT CONVERTED FROM AMERICAN IMMUNO TECH DWG. NO. 11-117-001 (REV A).
SOME COMPONENTS MAY HAVE BEEN MOVED TO OTHER ASSEMBLIES FOR EASE OF MANUFACTURING.

NOTES:

Item				Item				Item				Item			
Part No.		Part Name		Qty.	Part No.		Part Name		Qty.	Part No.		Part Name		Qty.	
A	0700-004-210	CHASSIS ASSEMBLY		1	AE	0700-004-013	WATER DRAIN FITTING		1	BK	0058-333-000	NYLON LOOP CLAMP		3	
B	0700-004-080	OFFLOAD PUMP ASSEMBLY		1	AF	0015-074-000	HEX JAM NUT 1-14		2	BL	0016-014-000	LOCKNUT, NYLON INSET 8-32		7	
C	0011-507-000	FLAT WASHER		4	AH	0048-199-000	BARBED FITTING 1/2 X 3/8		1	BM	0058-334-000	ADHESIVE CABLE MOUNT		18	
D	0004-542-000	SHCS 1/4-20 X 1-1/4		4	AJ	0700-004-015	CAM AND GROOVE COUPLING, MALE		1	BN	0052-507-000	STANDOFF 8-32 X 1		2	
E	0015-005-000	HEX NUT 1/4-20		4	AK	0700-004-014	WATER INLET FITTING		1	BP	0015-002-000	HEX NUT 8-32		2	
F	0700-005-070	ACTUATOR ASSEMBLY		1	AL	0048-196-000	HEX REDUCING NIPPLE		1	BR	0052-506-000	STANDOFF 8-32 X 3/4		2	
H	0004-550-000	BHCS 3/8-16 X 3/4		6	AM	0700-004-016	BACKFLOW PREVENTION VALVE		1	BS	0700-004-017	POWER SUPPLY SHIELD		1	
J	0700-004-061	REAR PANEL		1	AN	0048-198-000	BARBED FITTING 1/2 X 1/2		1	BT	0048-185-000	PNEUMATIC TEE FITTING		1	
K	0590-060-006	POWER SWITCH		1	AP	0060-010-000	BRAIDED TUBING 1/2" ID		32 IN	BW	0700-004-011	TOP COVER		1	
L	0700-001-415	FLEX STYLE STRAIN RELIEF		1	AR	0058-325-000	HOSE CLAMP		10	BY	0015-004-000	HEX NUT 10-32		3	
M	0700-004-065	POWER CORD ASSEMBLY		1	AS	0700-004-019	DOCKER GROUND CABLE ASSEMBLY (NOT SHOWN)		1	CA	0700-001-709	SPEC LABEL (WASTE)		1	
N	0004-549-000	BHCS 10-32 X 3/8		12	AT	0700-004-103	POWER SUPPLY CABLE (NOT SHOWN)		1	CB	0700-001-708	SPEC LABEL (WATER)		1	
P	0700-004-012	WALL ANCHORING RAIL		2	AW	0036-046-000	LABEL, PROTECTIVE EARTH (GRD)		2	CC	0044-048-000	VHB TAPE		5 IN	
R	0004-521-000	SHCS 10-30 X 5/8		8	AY	0013-018-000	LOCK WASHER #10 EXTERNAL		6	CD	0700-001-718	SPEC LABEL (NEPTUNE PLACARD)		1	
S	0700-005-041	RIGHT DOOR WELDMENT		1						CE	0700-004-707	PINCH POINT WARNING LABEL		1	
T	0700-004-050	PNEUMATICS PANEL ASSEMBLY		1	BB	0034-427-000	SLIT-CONVOLUTED CONDUIT (NOT SHOWN)		6 IN	CF	0700-005-701	SPEC LABEL (700-5 DOCKER S/N LABEL)		1	
W	0004-525-000	SHCS 8-32 X 3/8		14	BC	0058-330-000	CABLE TIE (NOT SHOWN)		44	CH	0700-004-703	SPEC LABEL (INPUT WATER PRESSURE WARNING)		1	
Y	0048-184-000	PNEUMATIC BULKHEAD FITTING		1	BD	0700-004-102	POWER SUPPLY TO PCB CABLE (NOT SHOWN)		1	CJ	0060-008-000	PNEUMATIC TUBING (NOT SHOWN)		24 IN	
AA	0700-005-700	SPEC LABEL (DETERGENT INLET)		1	BE	0700-004-112	OPTICAL SWITCH WIRE HARNESS (NOT SHOWN)		1	CK	0060-009-000	NYLON TUBING (NOT SHOWN)		20 IN	
AB	0700-004-032	SLOTTED CAM LATCH		2	BF	0700-005-111	DOCKER MAIN WIRE HARNESS ASSY (NOT SHOWN)		1	CL	0044-049-000	TEFLON TAPE, 1/2" (NOT SHOWN)		AR	
AC	0700-004-031	LEFT DOOR WELDMENT		1	BH	0700-004-114	AIR PUMP WIRE HARNESS (NOT SHOWN)		1	CM	0072-002-001	LOCTITE 242 (NOT SHOWN)		AR	
AD	0700-004-020	POWER SUPPLY PANEL ASSEMBLY		1	BJ	0700-004-116	PNEUMATICS WIRE HARNESS (NOT SHOWN)		1	CN	0072-002-003	LOCTITE 222 (NOT SHOWN)		AR	

17

PLACE THE GREEN/YELLOW WIRE TERMINAL FROM POWER CORD OVER GROUNDING STUD BETWEEN LOCK WASHERS. TORQUE TO 25 IN-LBS.

16

STAGGER HOSE CLAMPS SO THAT SCREWS ARE NOT LINED UP WITH EACH OTHER.

15

ENSURE ARROW ON BLACK FLOW VALVE IS POINTING DOWNWARDS WHEN INSTALLED.

14

CONNECTING POWER SWITCH:

A. ON INSIDE PANEL, CONNECT THE BLUE WIRE FROM THE POWER CORD 0700-004-065 TO THE BOTTOM LEFT MALE TERMINAL ("OFF" POSITION) OF THE POWER SWITCH.

B. ON INSIDE PANEL, CONNECT THE BROWN WIRE FROM THE POWER CORD 0700-004-065 TO THE BOTTOM RIGHT MALE TERMINAL ("OFF" POSITION) OF THE POWER SWITCH.

C. PLACE BLUE WIRE CONNECTOR OF POWER SUPPLY CABLE 0700-004-103 COMPLETELY OVER THE UPPER RIGHT POWER SWITCH SPADE TERMINAL.

D. PLACE BROWN WIRE CONNECTOR OF POWER SUPPLY CABLE 0700-004-103 COMPLETELY OVER THE UPPER RIGHT POWER SWITCH SPADE TERMINAL.

13

TIGHTEN FROM THE INSIDE OF THE PANEL WITH THE NUT PROVIDED TO 35 IN-LBS. THEN INSERT POWER CORD ASSEMBLY 0700-001-415 INTO THE STRAIN RELIEF FROM THE OUTSIDE OF THE PANEL AND TIGHTEN FROM THE INSIDE WITH THE NUT PROVIDED. TORQUE STRAIN RELIEF HEX TO 25 IN-LBS.

12

TORQUE TO 80 IN-LBS. ENSURE THAT BACK FLOW PREVENTION VALVE HOLDER DOES NOT SPIN.

11

APPLY LOCTITE 242 TO THE BOTTOM EXTERNAL THREADS. THEN APPLY 1/2" TEFLON TAPE TO THE TOP THREADS ONLY. WRAP 8 TIMES CLOCKWISE TO ENSURE FITTING IS WATERTIGHT.

10

TORQUE TO 360 IN-LBS.

9

TORQUE TO 240 IN-LBS.

8

TORQUE TO 40 IN-LBS.

7

TORQUE TO 25 IN-LBS.

6

TORQUE TO 11 IN-LBS.

5

TORQUE TO 6 IN-LBS.

4

APPLY TEFLON TAPE IN A CLOCKWISE DIRECTION ON THREADS.

3

APPLY LOCTITE 222.

2

APPLY LOCTITE 242.

21

ON THE PNEUMATICS PANEL:

A. CUT THE PNEUMATIC TUBING BETWEEN 1"-2" BELOW THE PRESSURE SWITCH. INSERT THE PNEUMATIC TEE FITTING (0048-185-000) INTO THE TWO ENDS OF THE CUT TUBING. THE LEG OF THE "T" SHOULD POINT INSIDE THE DOCKER.

B. ATTACH PNEUMATIC TUBING FROM THE SOLENOID OF THE INJECTOR PUMP ASSEMBLY.

20

CONNECT PNEUMATICS PANEL:

A. PLACE COMMON TERMINAL OF PNEUMATICS WIRE HARNESS (0700-004-116) ON THE TOP TERMINAL SPADE OF THE PNEUMATICS PANEL PRESSURE SWITCH.

B. PLACE THE N.C. TERMINAL ONTO THE BOTTOM TERMINAL SPADE OF THE PRESSURE SWITCH.

C. ON THE PNEUMATICS PANEL, LOCATE THE PNEUMATIC TUBING ATTACHED TO PORT 1 ON THE 410 SOLENOID (PORT FURTHEST AWAY FROM PANEL). ATTACH THE TUBING TO THE PNEUMATIC ELBOW FITTING AT THE FRONT SIDE OF THE ACTUATOR ASSEMBLY 0700-004-070. PUSH TUBING COMPLETELY OVER THE FITTING UNTIL BOTTOMED ON THE FITTING WALL.

D. ON THE PNEUMATICS PANEL, LOCATE THE PNEUMATIC TUBING ATTACHED TO PORT 2 ON THE 410 SOLENOID. ATTACH THE TUBING TO THE PNEUMATIC ELBOW FITTING AT THE REAR SIDE OF THE ACTUATOR ASSEMBLY 0700-004-070. PUSH TUBING COMPLETELY OVER THE FITTING UNTIL BOTTOMED ON THE FITTING WALL.

19

ATTACH THE FOLLOWING WIRES TO GROUND STUD:

A. ATTACH LARGER GREEN/YELLOW WIRE TERMINAL OF 0700-004-019 DOCKER GROUND CABLE ASSEMBLY BETWEEN TWO #10 LOCK WASHERS AND THEN PLACE HEX NUT 0015-004-000 ONTO GROUND STUD AND TORQUE TO 25 IN-LBS.

B. PLACE LOCK WASHER ON GROUND STUD. ATTACH GREEN/YELLOW WIRE TERMINAL FROM CABLE HARNESS 0700-004-111 (OTHER END IS CONNECTED TO 1LJ2) TO GROUND STUD. PLACE OTHER LOCK WASHER OVER WIRE TERMINAL AND TORQUE LOCKNUT TO 25 IN-LBS.

18

ATTACH CONNECTIONS ON POWER SUPPLY PANEL ASSEMBLY (0700-004-020) AS FOLLOWS:

A. INSERT SCREW THROUGH SMALLER RING TERMINAL OF THE DOCKER GROUND CABLE (0700-004-019) AND THREAD INTO BOTTOM SCREW OF 3 TERMINAL BLOCK.

B. PLACE BLUE WIRE FORK TERMINAL UNDER MIDDLE SCREW OF 3-TERMINAL BLOCK ON THE POWER SUPPLY AND FASTEN ENOUGH TO HOLD FORK.

C. PLACE BROWN WIRE FORK TERMINAL UNDER TOP SCREW OF 3-TERMINAL BLOCK ON THE POWER SUPPLY AND FASTEN ENOUGH TO HOLD FORK.

D. CONNECT POWER SUPPLY TO PCB CABLE (0700-004-102) TO POWER SUPPLY EIGHT-TERMINAL BLOCK. TERMINAL POSITIONS ARE NUMBERED 1-8 FROM TOP AND CABLE TERMINALS ARE NUMBERED 8-1 FROM TOP. TORQUE ALL SCREWS TO 11 IN-LBS.

5-7 03

DATE

CHK'D BY

DFTG

SYM

CHANGE DESCRIPTION

A1

REMOVED: ITEM BA 0016-025-000 LOCKNUT...

A2

WAS: ITEM BY 0015-004-000 HEX NUT 10-32 1

A

REVISED PICTORIALY ECO 03Y2E02752

FORM NO. 191m009, Rev. NONE

SHEET 1 OF 7

stryker

INSTRUMENTS

4100 E. MILHAM KALAMAZOO, MI. 49001

DRAWN BY A. GREENHALGH

DATE 12-16 02

MFG APPROVAL S/A. BEVERAGE

DATE 1-03

QA APPROVAL S/S. HORVATH

DATE 1-03

TITLE NEPTUNE DOCKER ASSEMBLY

PART NO. 0700-905-010

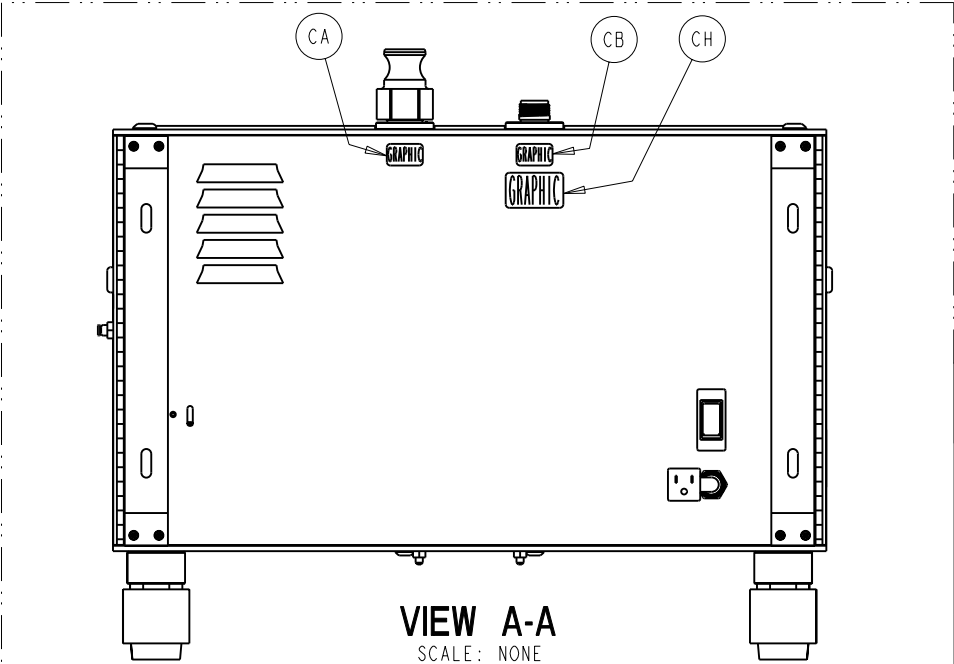
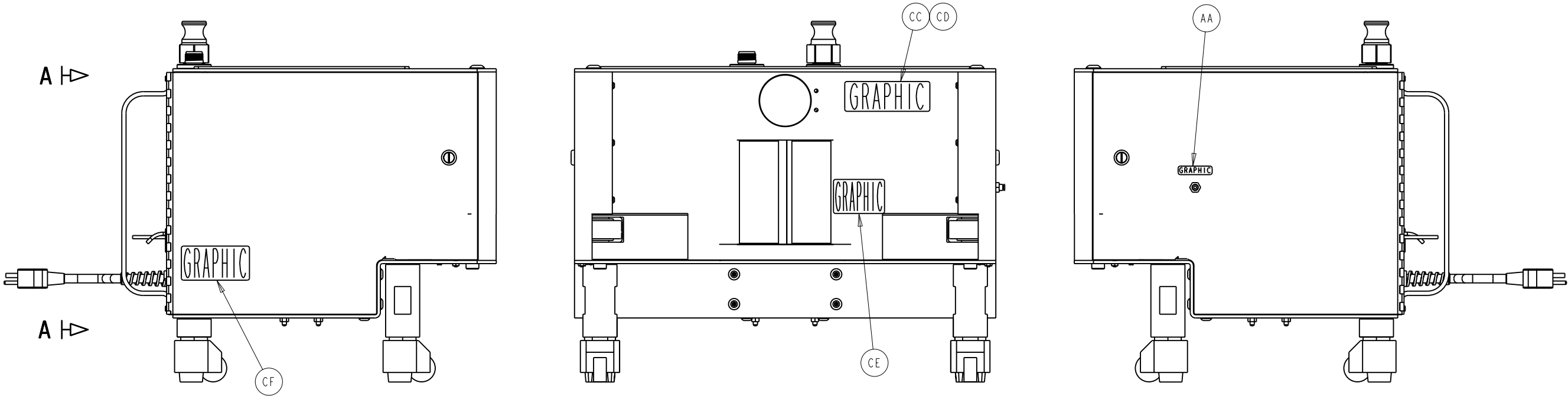
REV. A

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NOTES:

1. APPLIES TO DOCKER MODEL 700-5 (SOAPY DOCKER).

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION



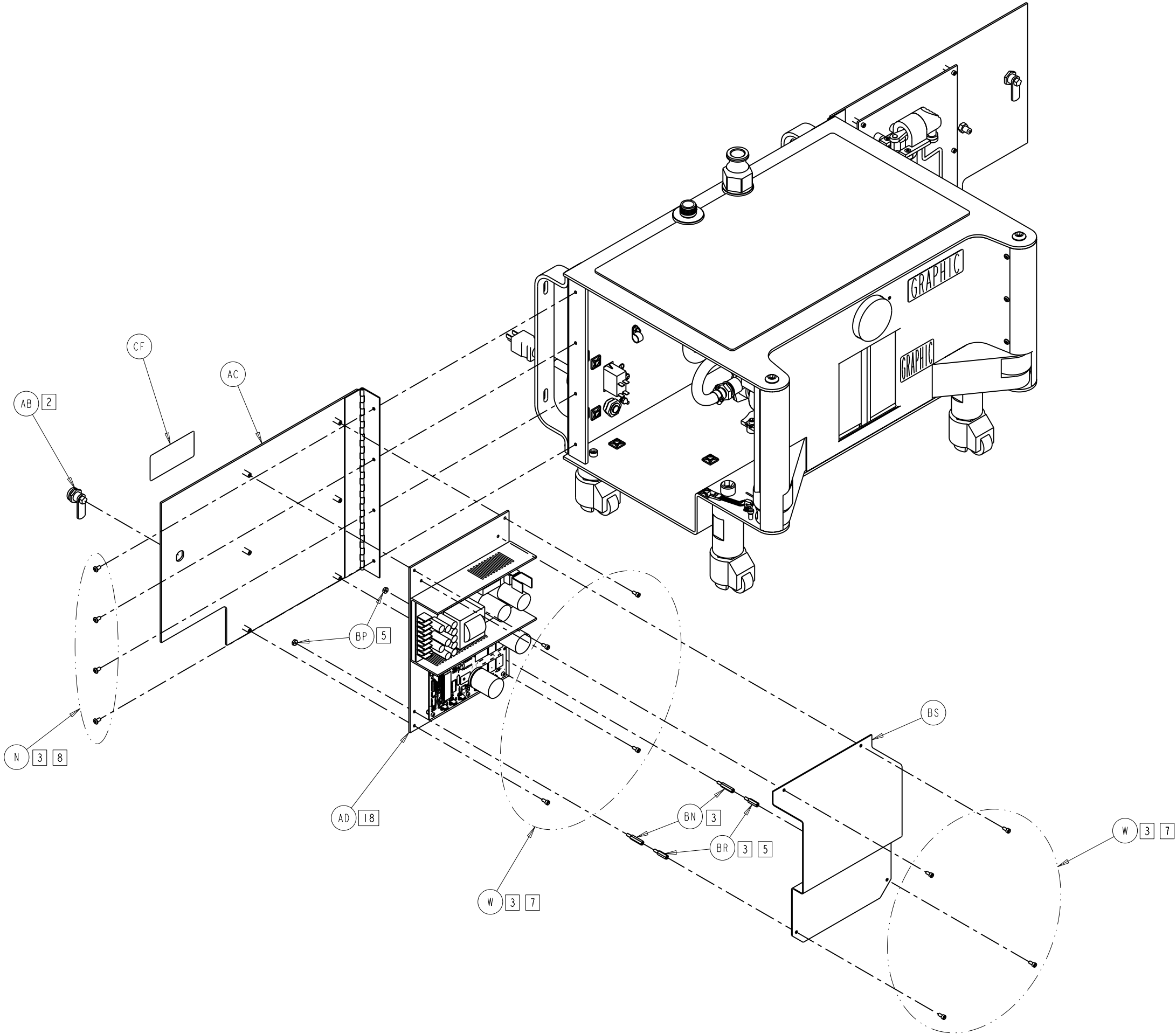
NOTES:

FORM NO. 191m009, Rev. NONE	SHEET 2 OF 7
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE NEPTUNE DOCKER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-905-010	REV. A

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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

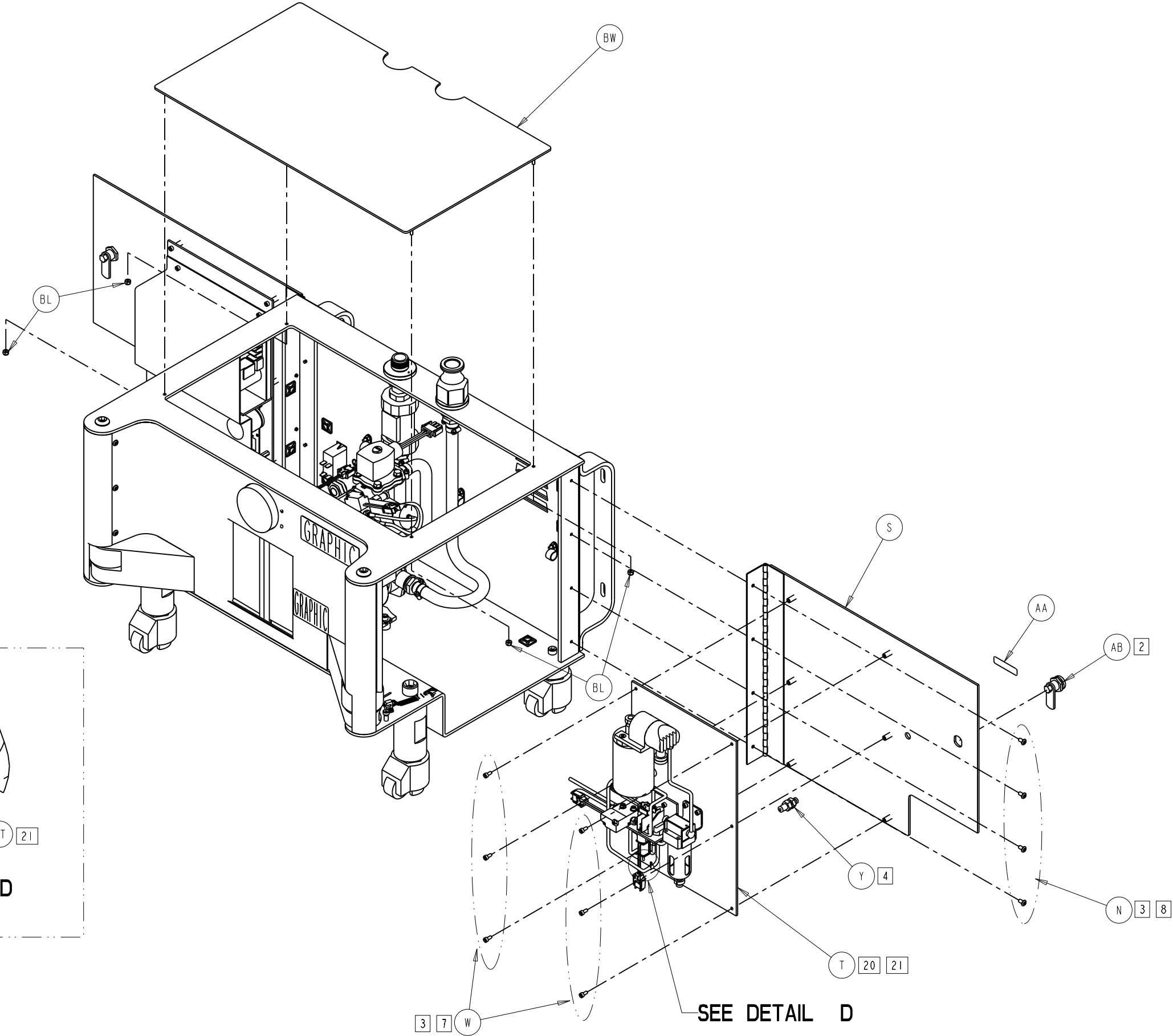


NOTES :

FORM NO. 191m009, Rev. NONE	SHEET 3 OF 7
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE NEPTUNE DOCKER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-905-010	REV. A
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DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

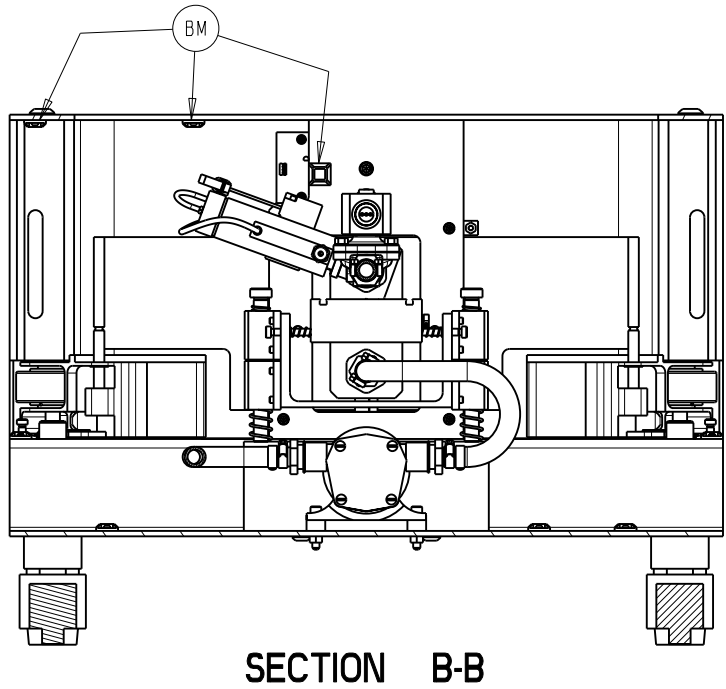
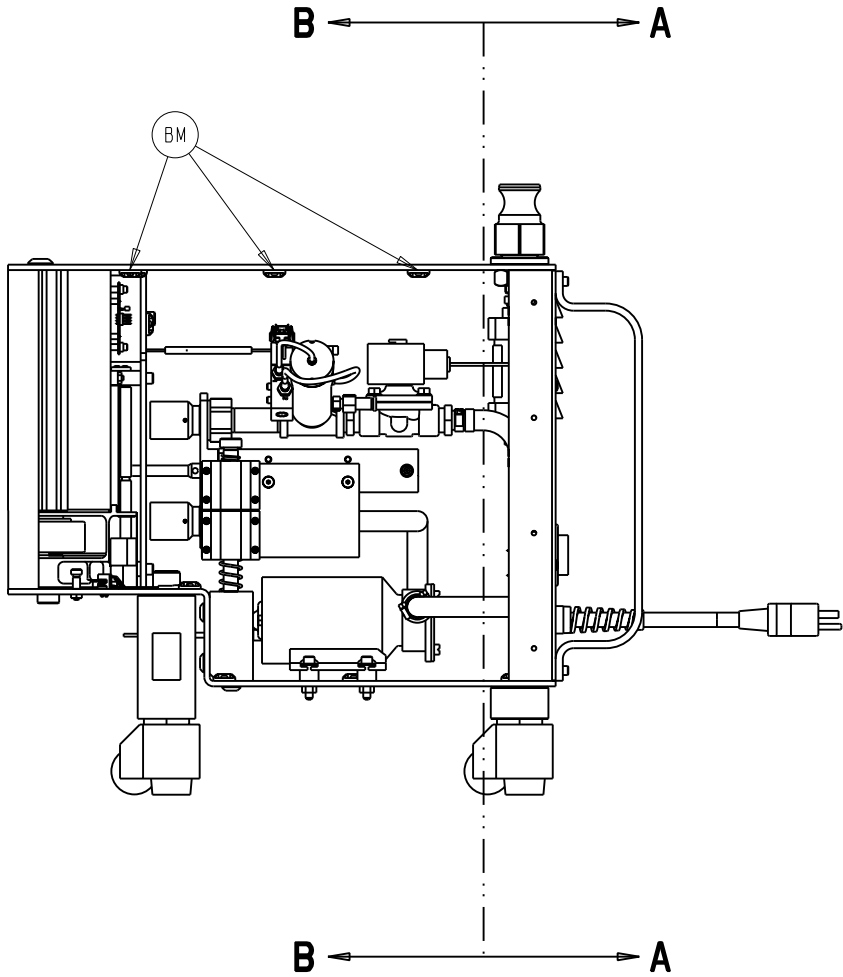
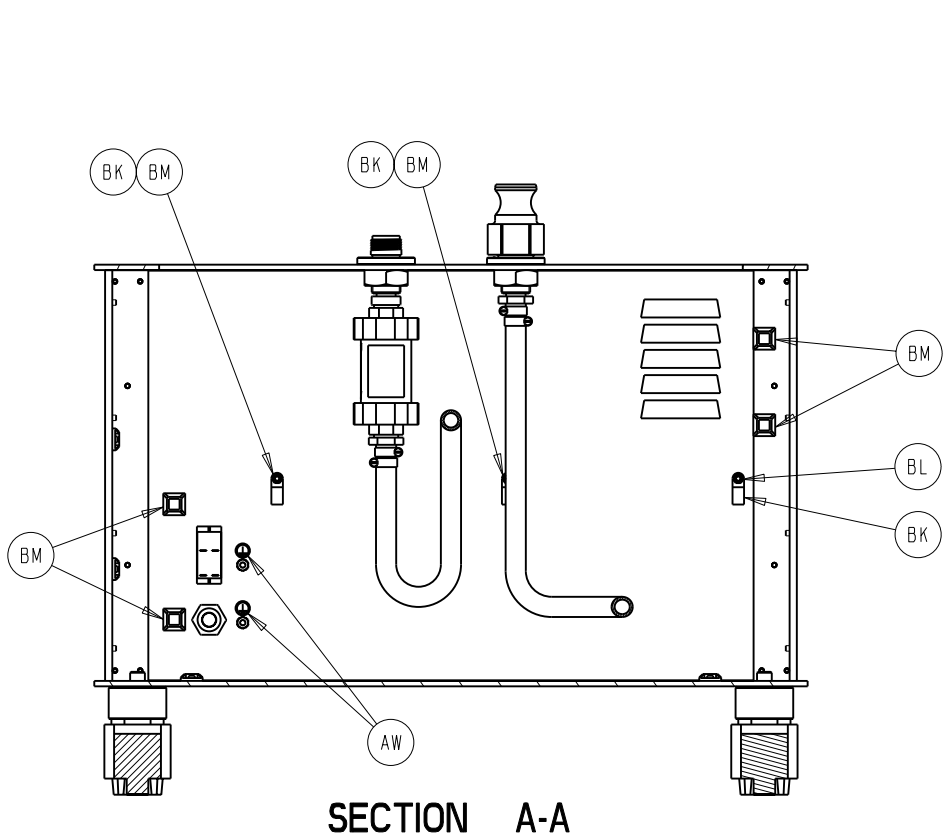


FORM NO. 19im009, Rev. NONE	SHEET 4 OF 7
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE NEPTUNE DOCKER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-905-010	REV. A
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NOTES:

DATE	CHK'D BY	DFTG	SYM	CHANGE DESCRIPTION

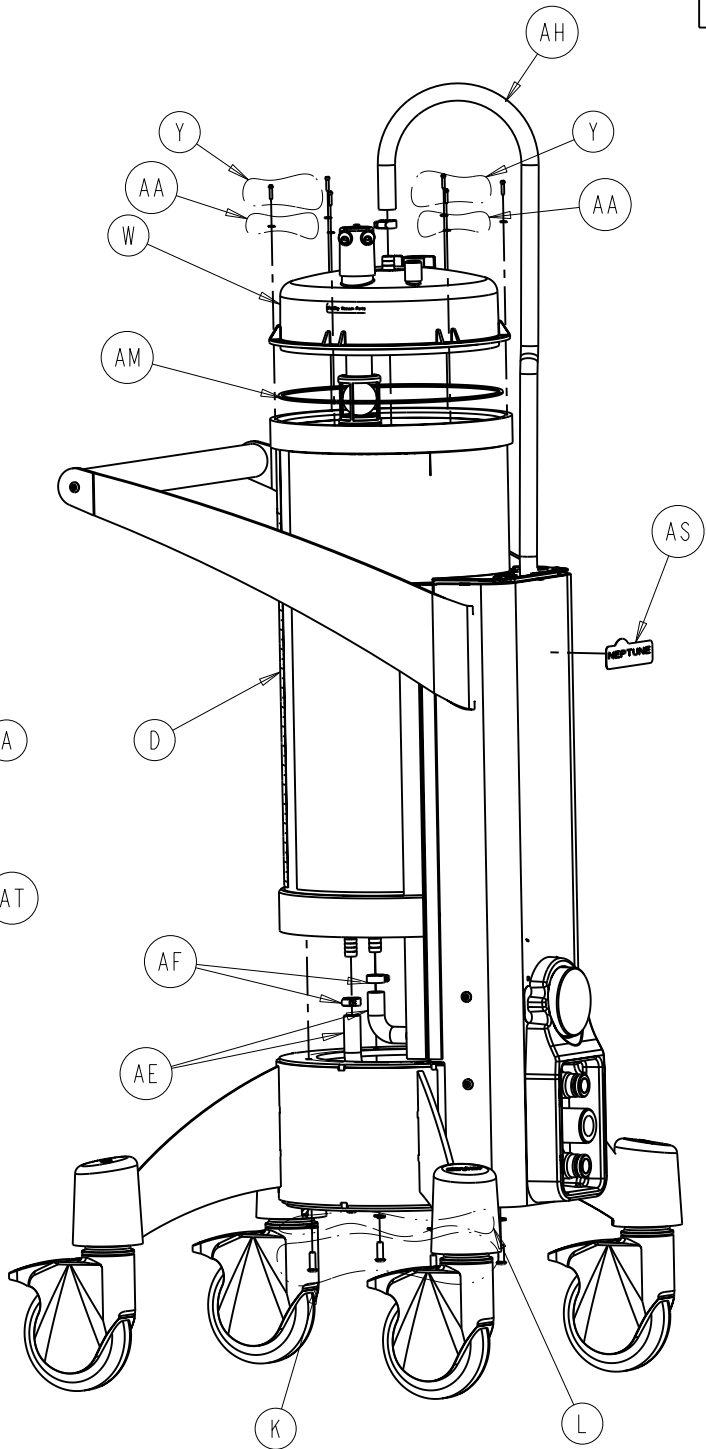
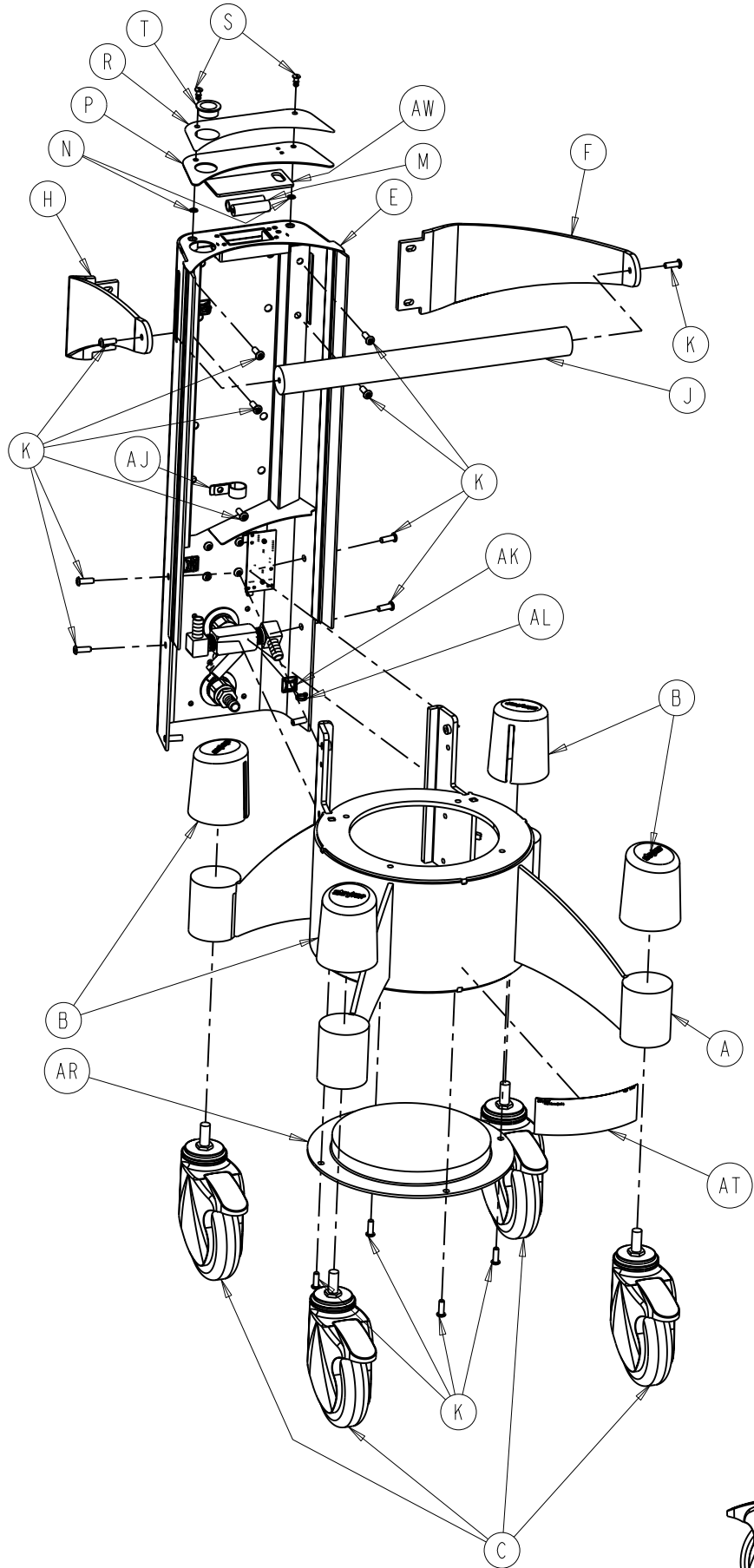


NOTES :

FORM NO. 19im009, Rev. NONE	SHEET 6 OF 7
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stryker INSTRUMENTS <small>4100 E. MILHAM KALAMAZOO, MI. 49001</small>			
DRAWN BY A. GREENHALGH	DATE 12-16-02	TITLE NEPTUNE DOCKER ASSEMBLY	
MFG APPROVAL S/A. BEVERAGE	DATE 1-03		
QA APPROVAL S/S. HORVATH	DATE 1-03	PART NO. 0700-905-010	REV. A
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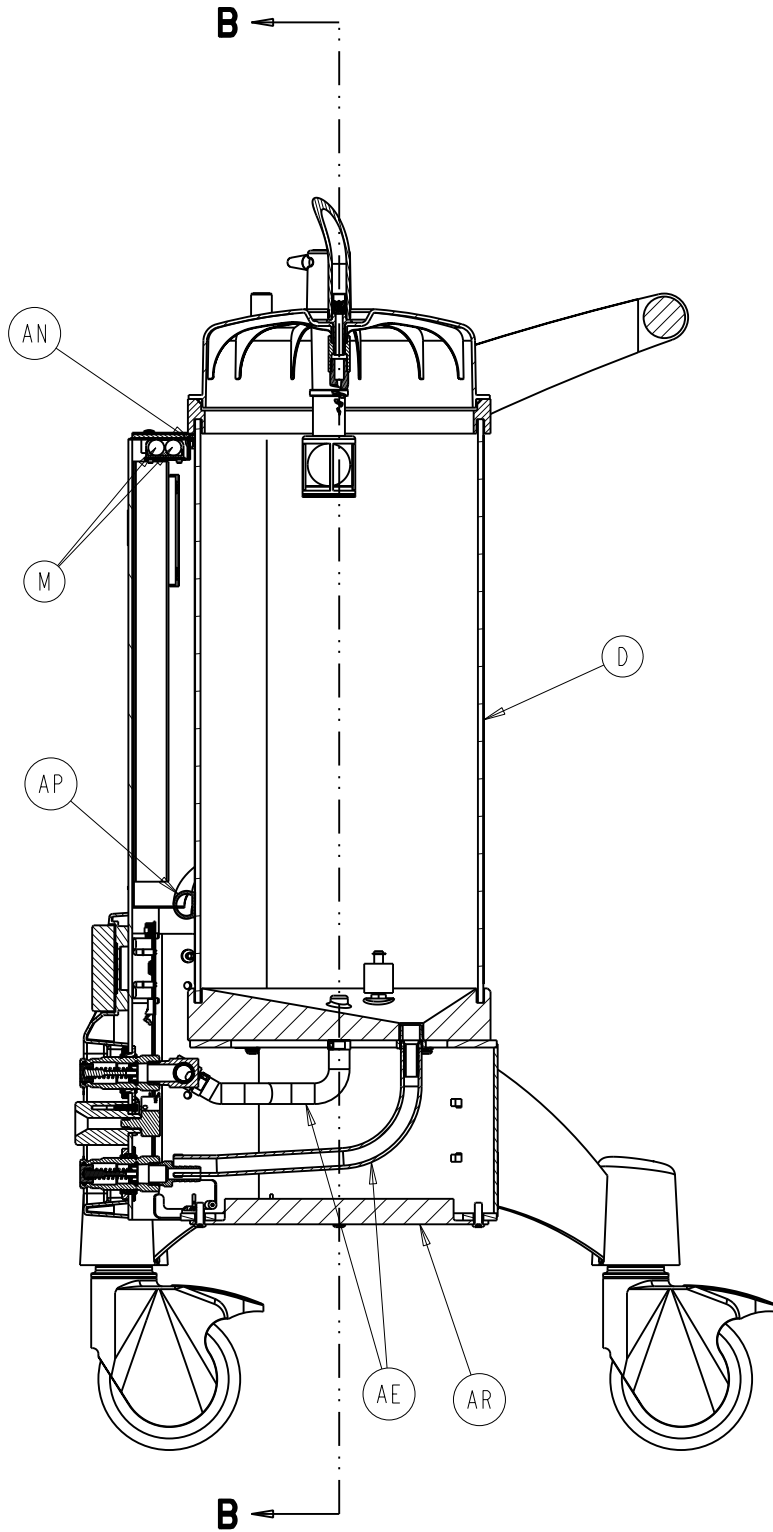
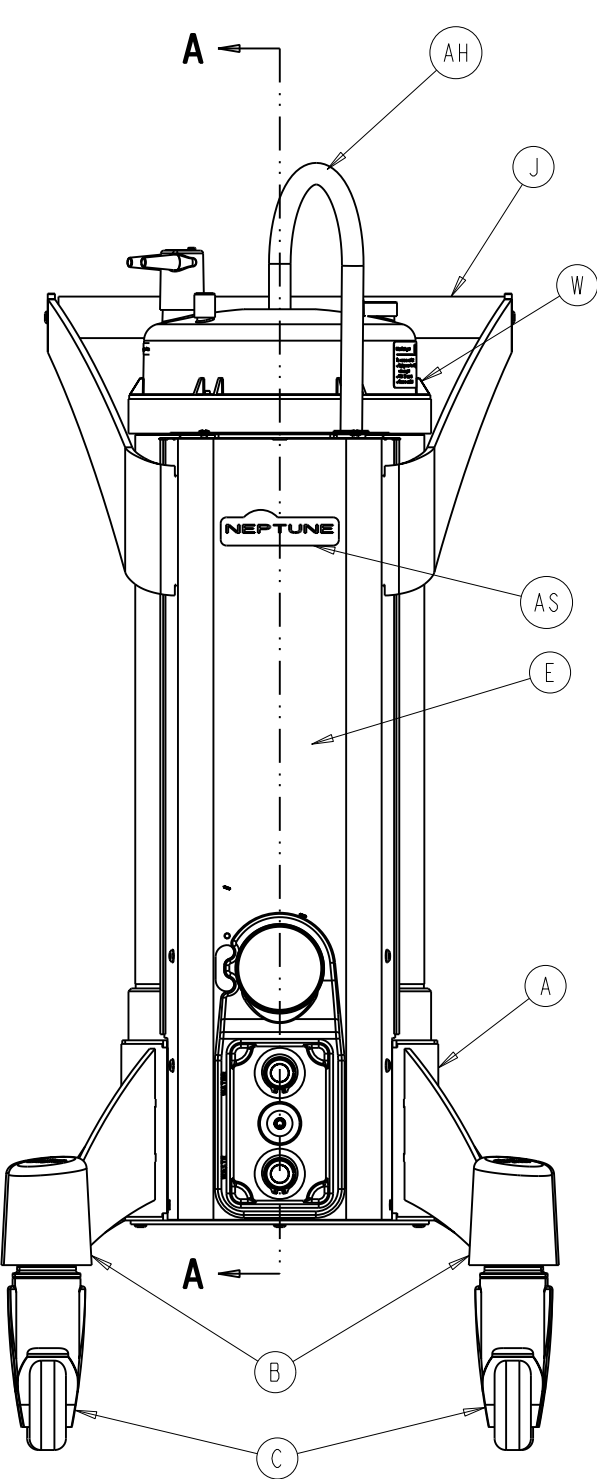
ITEM	PART NO.	PART NAME	QTY
A	0700-007-011	CHASSIS WELDMENT	1
B	0700-007-013	BUMPER	4
C	0700-007-019	CASTER	4
D	0700-007-320	CANISTER ASSEMBLY	1
E	0700-007-210	TOWER ASSEMBLY	1
F	0700-007-014	HANDLE LEFT SUPPORT	1
H	0700-007-015	HANDLE RIGHT SUPPORT	1
J	0700-007-016	HANDLE	1
K	0004-551-000	1/4-20 X 3/4 BHCS	19
L	0012-012-000	SPLIT LOCK WASHER 1/4 I.D.	4
M	0207-050-041	AA BATTERY	2
N	0058-115-000	RETAINER	2
P	0700-007-411	BATTERY DOOR	1
R	0700-007-702	BATTERY DOOR LABEL	1
S	0058-114-000	1/4-TURN STUD	2
T	0058-347-000	SNAP BUSHING	1
W	0700-007-170	CANISTER CAP ASSEMBLY	1
Y	0004-546-000	#4-40 X 1/2 SHCS	6
AA	0011-052-000	#4 FLAT WASHER	6
<div> <div>B1</div> <div>B2</div> <div>B3</div> </div>			
AE	0700-007-018	WASTE/SPRINKLER TUBE	2
AF	0058-325-000	HOSE CLAMP	6
AH	0700-007-017	UPPER SPRINKLER TUBE	1
AJ	0058-349-000	STEEL LOOP STRAP	1
AK	0058-334-000	ADHESIVE CABLE MOUNT	3
AL	0058-330-000	CABLE TIE	3
AM	0045-267-000	O-RING	1
AN	0700-007-023	TOP EDGE TRIM	2
AP	0700-007-024	BOARD EDGE TRIM	1
AR	0700-007-022	BOTTOM COVER	1
AS	0700-007-705	ROVER BRONZE LABEL	1
AT	0700-007-701	SPEC LABEL	1
AW	0700-007-412	BATTERY DOOR FOAM	1
AY	0072-002-019	3M SCOTCH-WELD DP-8005 (NOT SHOWN)	AR
BA	0072-002-002	LOCTITE 271 (NOT SHOWN)	AR
BB	0072-002-056	LOCTITE 425 (NOT SHOWN)	AR
BC	0072-002-138	LOCTITE 242 (NOT SHOWN)	AR



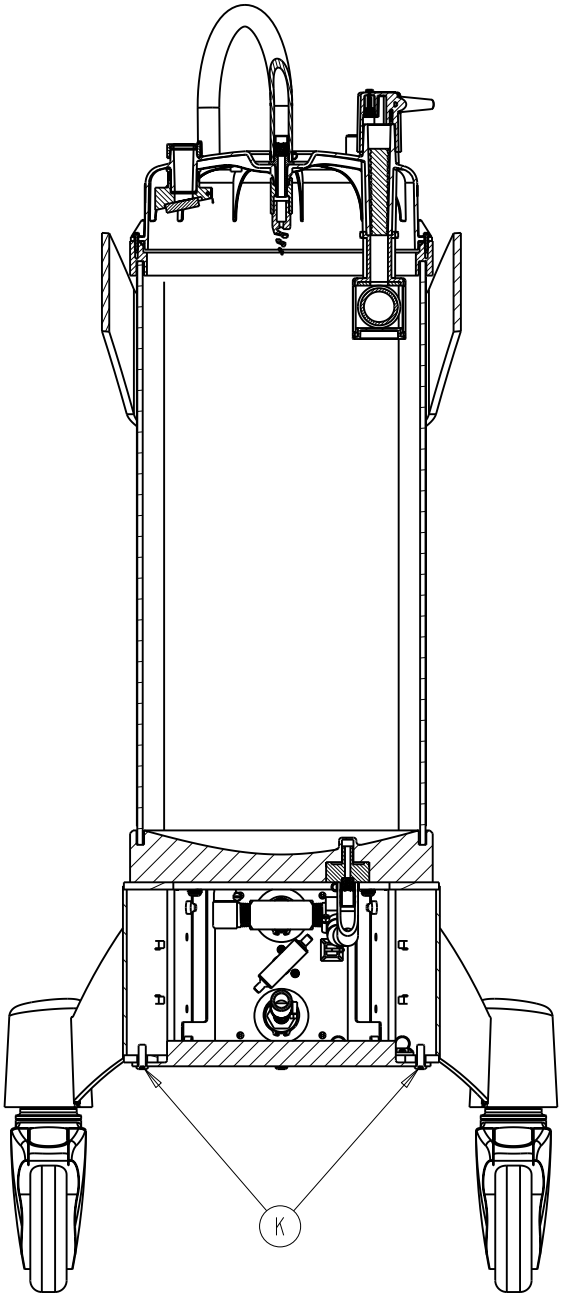
PRODUCTION RELEASED				DATE	3-26-04
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION	
7-12-04	S/KB	JAR	A	REVISED PICTORIALY	ECO 04Y2004060
			A1	WAS: T2 (PG.5)	
			A2	WAS:SEQUENCE: 430 ...LINE UP 4 HOLES.(PG.15)	
			A3	WAS:SEQUENCE: 490 REMOVE BACKING...(PG.17)	
			A4	WAS:SEQUENCE: 670 USING (2) FIXTURES...(PG.22)	
			A5	ADDED:SEQUENCE: 445 TQC CHECK FOR...(PG.15)	
			A6	ADDED: ITEM F9 5905-003-492...(PG.17)	
11-18-04	S/KKB	KB	B	REVISED PICTORIALY	ECO 04Y2E08505
			B1	REMOVED: ITEM AB 0061-009-000 CHECK...I	
			B2	REMOVED: ITEM AC 0028-340-000 RETAINING...I	
			B3	REMOVED: ITEM AD 0048-227-000 1/2" BARBED...I	
			B4	REMOVED: FIXTURES: 5905-003-437...(PG.3)	
			B5	REMOVED: FIXTURES: 5905-003-444...(PG.3)	
			B6	REMOVED: SHEET 5	
			B7	RENUMBERED EXISTING SEQUENCES	

FORM NO. 09fm147, Rev. C	SHEET 1 OF 21	PROJECT NO. 1808	0700-007-000 NEXT ASSEMBLY
DRAWING BASED ON ASME Y14.5M-1994 STANDARD DO NOT SCALE DRAWING			
REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS APPLY AFTER COATING.			
DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.			
TOLERANCES: DECIMAL:± .010 ANGULAR:± 1° CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT THREAD CHAMFER (OR COUNTERSINK)-----1 TO 1 1/2 THREADS DEEP			
GENERAL FINISH -----250 (MAX)			
<div> <div></div> <div></div> </div>			
STRYKER SYMBOLS Ⓢ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION			
DRAWN BY C. DRAKE	DATE 2-9-04	TITLE ROVER ASSEMBLY	
DESIGNED BY S/S. REASONER	DATE 3-25-04		
MFG APPROVAL S/B. SHARP	DATE 3-25-04	MATERIAL	
QA APPROVAL S/A. BEVERAGE	DATE 3-25-04		
AUTHORIZED BY S/B. LALOMIA	DATE 3-25-04	FINISH	
DFTG APPROVAL S/C. DRAKE	DATE 3-26-04		
SIZE B	PART NO. 0700-007-010	REV. B	
<div> <div>stryker</div> <div>INSTRUMENTS</div> <div>4100 E. MILHAM KALAMAZOO, MI. 49001</div> </div>			
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NOTES:



SECTION A-A

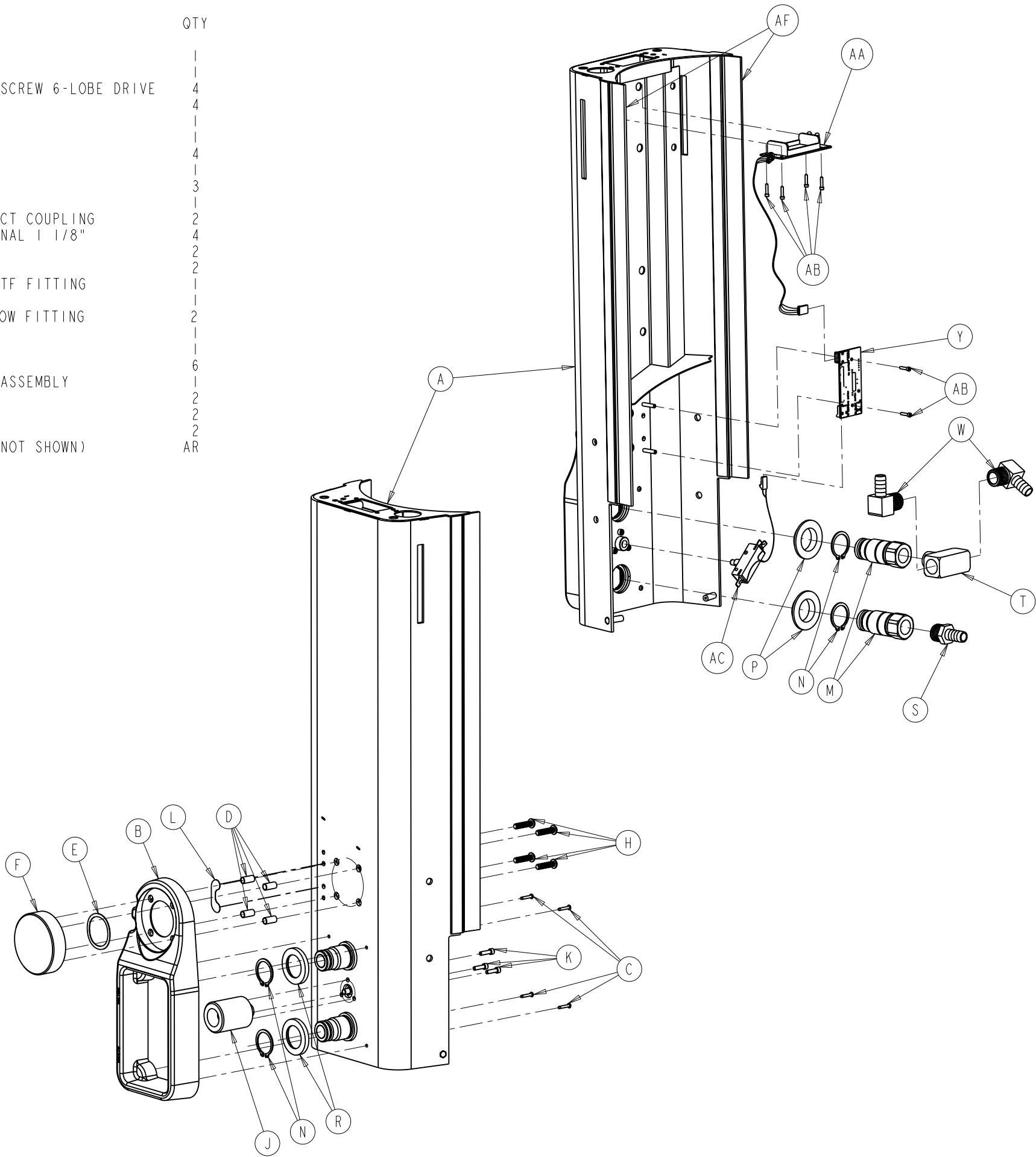


SECTION B-B

NOTES:

FORM NO. 09fm147, Rev. C	SHEET 2 OF 21	PROJECT NO. 1808	0700-007-000 NEXT ASSEMBLY
DRAWING BASED ON ASME Y14.5M-1994 STANDARD DO NOT SCALE DRAWING			
REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS APPLY AFTER COATING.			
DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.			
TOLERANCES: DECIMAL:± .010 ANGULAR:± 1° CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT THREAD CHAMFER (OR COUNTERSINK)-----1 TO 1 1/2 THREADS DEEP			
GENERAL FINISH -----250 (MAX)			
STRYKER SYMBOLS Ⓢ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION			
DRAWN BY C. DRAKE	DATE 2-9 04	TITLE ROVER ASSEMBLY	
DESIGNED BY S/S. REASONER	DATE 3-25 04		
MFG APPROVAL S/B. SHARP	DATE 3-25 04	MATERIAL	
QA APPROVAL S/A. BEVERAGE	DATE 3-25 04	FINISH	
AUTHORIZED BY S/B. LALOMIA	DATE 3-25 04		
DFTG APPROVAL S/C. DRAKE	DATE 3-26 04	SIZE B	PART NO. 0700-007-010
REV. B			

ITEM	PART NO.	PART NAME	QTY
A	0700-007-211	TOWER WELDMENT	1
B	0700-007-218	FINGER GUARD	1
C	0023-274-000	4-24 X .625 PAN HEAD SCREW 6-LOBE DRIVE	4
D	0700-007-233	SCREW SPACER	4
E	0014-108-000	WAVE SPRING	1
F	0700-001-222	MAGNET SPACER	1
H	0004-576-000	1/4-20 X 1 BHCS	4
J	0700-007-224	DOCKING PIN GUIDE	1
K	0004-522-000	8-32 X 5/8 SHCS	3
L	0700-007-710	IR SHIELD	1
M	0700-001-223	FEMALE QUICK DISCONNECT COUPLING	2
N	0028-313-000	RETAINING RING, EXTERNAL 1 1/8"	4
P	0700-001-229	COUPLING INNER SPACER	2
R	0700-001-231	COUPLING OUTER SPACER	2
S	0048-227-000	1/2" BARBED X 1/2" NPTF FITTING	1
T	0048-224-000	1/2" BRANCH TEE	1
W	0048-225-000	1/2" BARBED X 90° ELBOW FITTING	2
Y	0700-007-213	MAIN CONTROLLER PCBA	1
AA	0700-007-212	BATTERY STATUS PCBA	1
AB	0004-546-000	4-40 X 1/2 SHCS	6
AC	0700-007-215	COUPLED SWITCH CABLE ASSEMBLY	1
AD	0058-334-000	ADHESIVE CABLE MOUNT	2
AE	0058-330-000	CABLE TIE	2
AF	0700-007-214	EDGE TRIM	2
AH	0072-002-138	LOCTITE 242 (NOT SHOWN)	AR



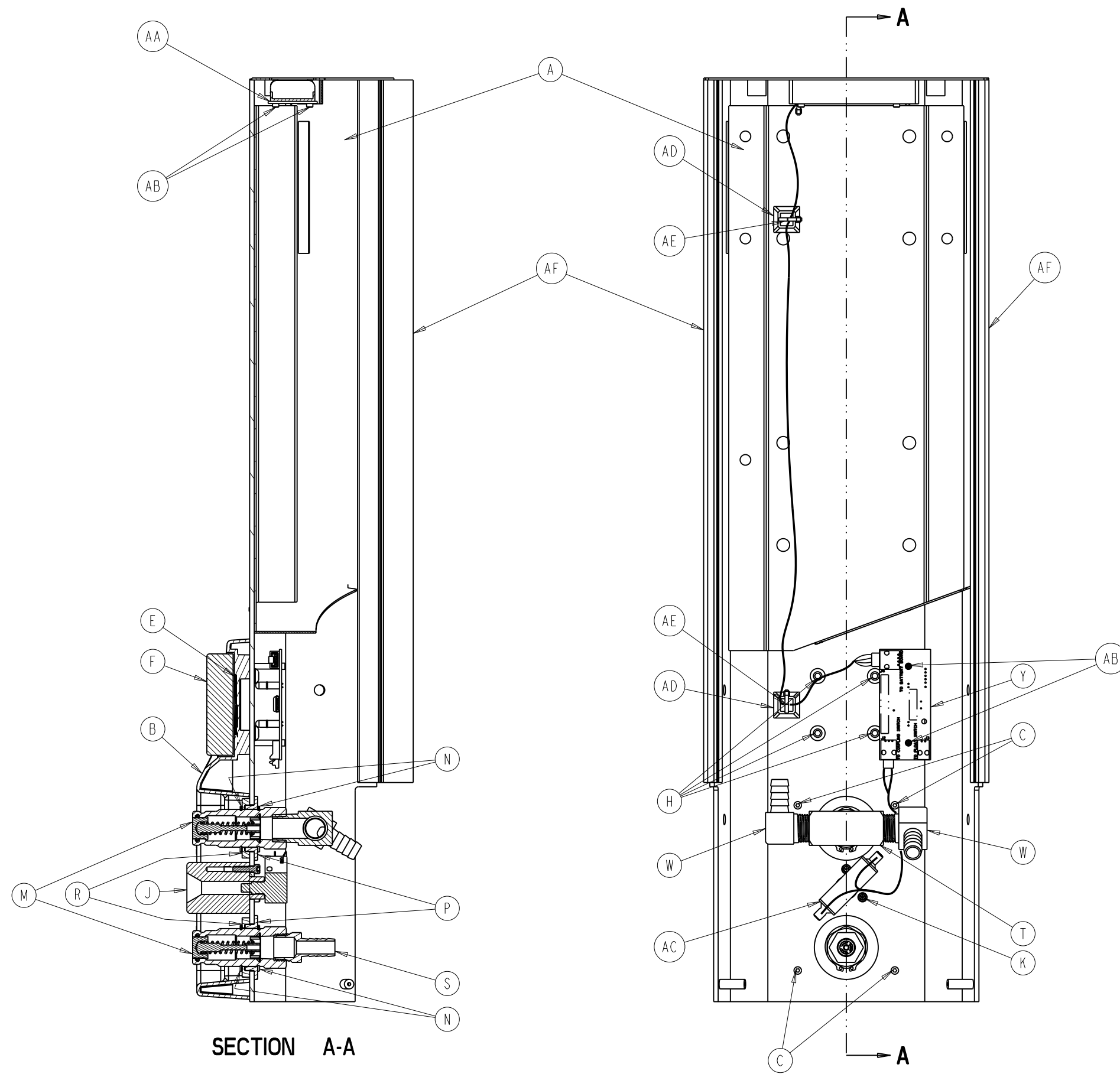
NOTES:

PRODUCTION RELEASED				DATE	3-16-04
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION	
6-10-04	S/JR	KB	A	WAS: 80 SET...11 Holes...	ECO 04Y2004059
			A1	WAS: 470 ...Make..PCB visible from front..	
			A2	ADDED: 295 NOTE: Rinse Water Coupling...	

FORM NO. 09fm147, Rev. C	SHEET 1 OF 18	PROJECT NO. 1808	0700-007-010 NEXT ASSEMBLY
DRAWING BASED ON ASME Y14.5M-1994 STANDARD DO NOT SCALE DRAWING			
REQUIREMENTS FOR FINISHED PART UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS APPLY AFTER COATING.			
DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.			
TOLERANCES: DECIMAL:± .010 ANGULAR:± 1° CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT THREAD CHAMFER (OR COUNTERSINK)-----1 TO 1 1/2 THREADS DEEP			
GENERAL FINISH -----250 (MAX)			
STRYKER SYMBOLS ⊕ CRITICAL DIMENSION, ⊕ CRITICAL PACKAGING DIMENSION			
DRAWN BY C. DRAKE	DATE 11-19-03	TITLE TOWER ASSEMBLY	
DESIGNED BY	DATE 3-12-04	MATERIAL	
S/S. REASONER	DATE	FINISH	
MFG APPROVAL	DATE 3-04	PART NO. 0700-007-210	
S/B. SHARP	DATE 3-12-04	REV. A	
QA APPROVAL	DATE 3-12-04		
S/A. BEVERAGE	DATE 3-12-04		
AUTHORIZED BY	DATE 3-12-04		
S/B. LALOMIA	DATE 3-12-04		
DFTG APPROVAL	DATE 3-12-04		
S/G. HEILMAN	DATE 3-12-04		

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INSTRUMENTS
4100 E. MILHAM KALAMAZOO, MI. 49001

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SECTION A-A

NOTES:

PRODUCTION RELEASED				DATE 3-16-04	
DATE	CHK'D BY	DFTG	SYM	DESCRIPTION	

FORM NO. 09fm147, Rev. C	SHEET 2 OF 18	PROJECT NO. 1808	0700-007-010 NEXT ASSEMBLY
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DIMENSIONS SHOWN ARE IN INCHES UNLESS OTHERWISE SPECIFIED.			
TOLERANCES: DECIMAL:± .010 ANGULAR:± 1°			
CORNER BREAK (EXTERNAL & INTERNAL)---.020/.002 RADIUS OR EQUIVALENT			
THREAD CHAMFER (OR COUNTERSINK)-----1 TO 1 1/2 THREADS DEEP			
GENERAL FINISH -----250 (MAX)			
STRYKER SYMBOLS Ⓢ CRITICAL DIMENSION, Ⓟ CRITICAL PACKAGING DIMENSION			
DRAWN BY C. DRAKE	DATE 11-19-03	TITLE TOWER ASSEMBLY	
DESIGNED BY	DATE 3-12-04	MATERIAL	
S/S. REASONER	DATE 3-12-04	FINISH	
MFG APPROVAL	DATE 3-04	SIZE B	
S/B. SHARP	DATE 3-12-04	PART NO. 0700-007-210	
S/A. BEVERAGE	DATE 3-12-04	REV. A	
AUTHORIZED BY	DATE 3-12-04		
S/B. LALOMIA	DATE 3-12-04		
DFTG APPROVAL	DATE 3-12-04		
S/G. HEILMAN	DATE 3-12-04		

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INSTRUMENTS

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